JULY 26, 1958
VOL. 155 — NO. 4

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

RESERVE AWARD

Maj. Gen. Ralph W. Zwicker (right) presents Defense Reserve Award banner to Clare E. Williams (center), president of General Telephone Co. of Ohio, while Maj. Gen. Leo M. Kreber looks on. First award to an Independent. Story, page 48.

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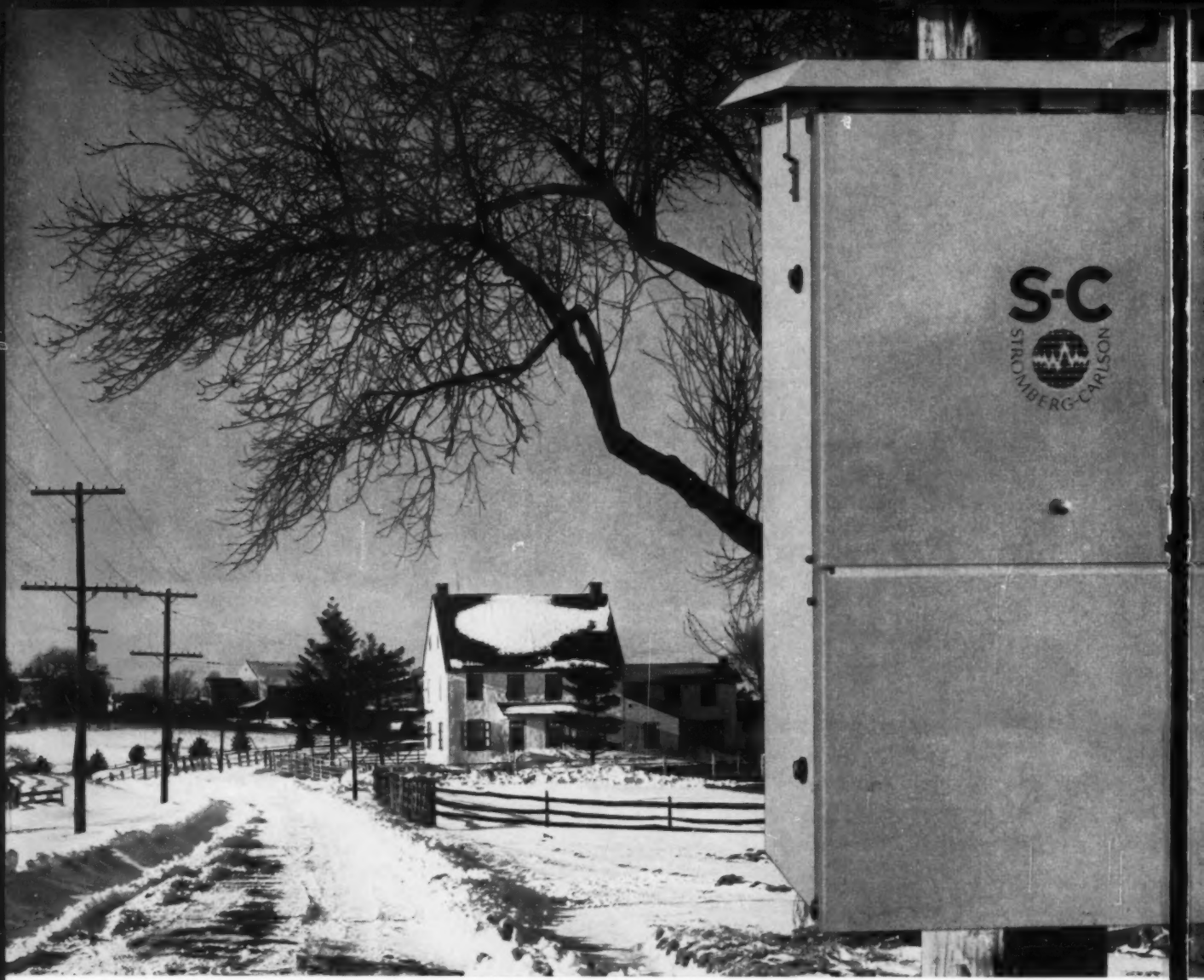
ELECTRONICS SECTION—Page 21

MANAGEMENT • PLANT • TRAFFIC • COMMERCIAL • LEGAL • ACCOUNTING



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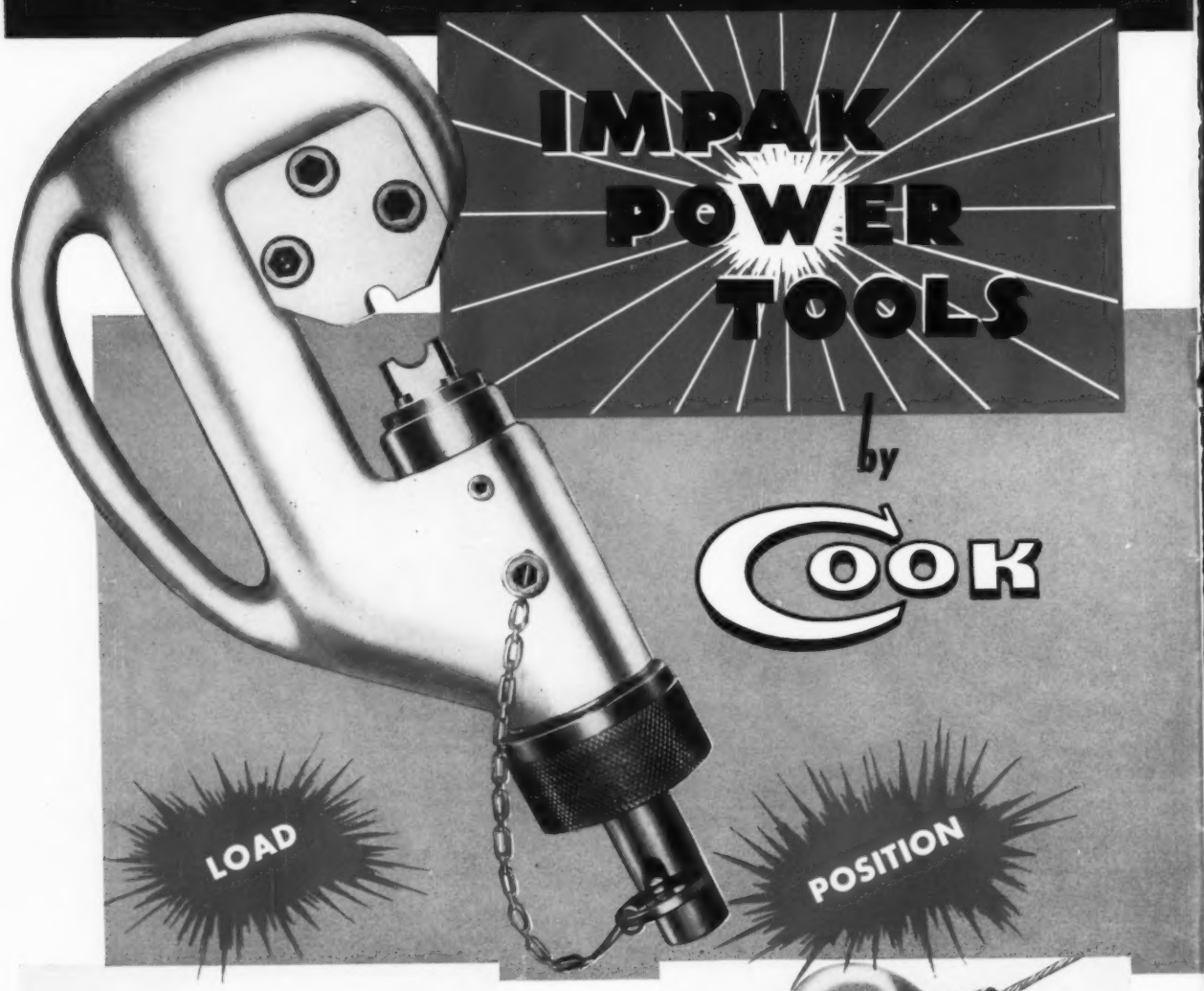

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FLASHES AND PLUGS

SORRY, WRONG SPECIES! A wrong number was received by a gentleman telephoning his fiancé one Sunday afternoon in New York City recently. "May I please speak to Bunny," he asked.

A child's voice at the other end of the telephone answered, "Sorry, we don't have bunnies; only parakeets!"

•

THE BARRIER FACTS. A loud explosion rocked the Albany, N. Y. area recently and an indignant woman telephoned one of the daily newspapers to find out what happened.

A reporter said he thought a jet plane had broken the sound barrier.

"If that barrier keeps getting in everybody's way," she snapped, "why don't they take it down?"

•

REELING WITH SUCCESS. On July 5, while fishing in 80 feet of water in Upper Manitou Lake, Ontario, Canada, Walter F. Roberts, personnel director of Lincoln (Neb.) Telephone & Telegraph Co., pulled a rod and reel from the bottom of the lake. The equipment to his surprise was in perfect condition, complete with sinkers and spinner bait.

The guide described the party who lost the rod and reel as a lady from Nebraska who was one of a party of four (two married couples), who had been there two weeks previous.

The lady turned out to be Mrs. Bill Placek who is Mr. Roberts' next door neighbor.

They had stayed at the Karnopp's Kamp at Gold Rock Wabigoon, the same camp where Roberts and party of seven stayed.

Mrs. Placek talked with Mr. Roberts about the fishing trip but failed to mention her rod and reel being dropped in the lake. She was speechless when he presented her with her cherished equipment July 12.

"I never expected to see it again," she said. The guide, who knew exactly where it was dropped, had tried without success to retrieve it.

Lake Manitou is roughly 15 miles wide by 45 miles long and 850 miles from Wahoo, Nebraska.

Witnesses to this happy ending of an unhappy event were: judge Adolph E. Wenke, State Capitol, Lincoln; judge Emerson Kokjer of Wahoo, Neb.; Leo J. Beck, Jr. of Lincoln; Elmer Karnopp of Gold Rock, Wabigoon, Ontario, Canada and Roy Kaplin, guide, also of Gold Rock, Wabigoon.

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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1901

July 26, 1958

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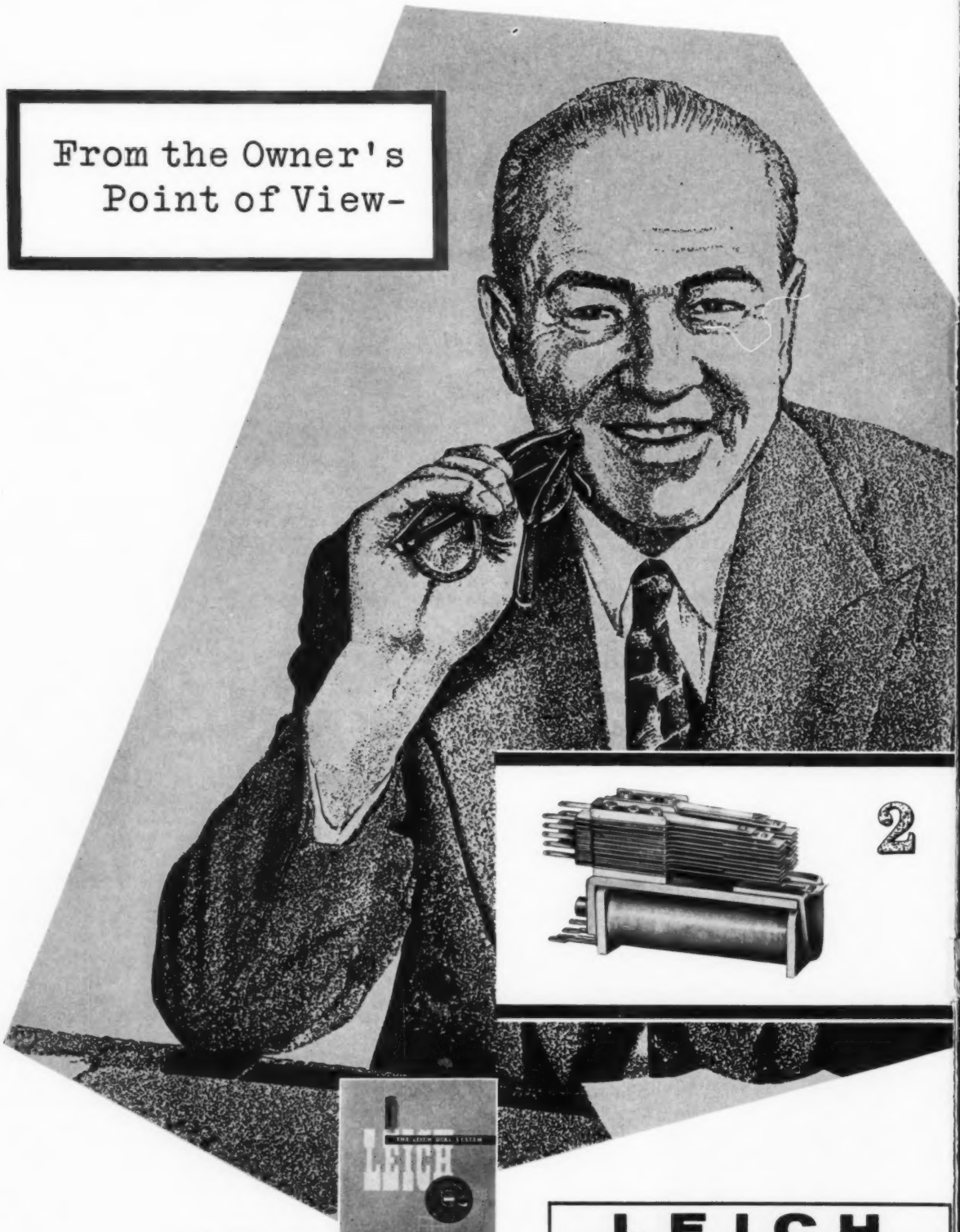

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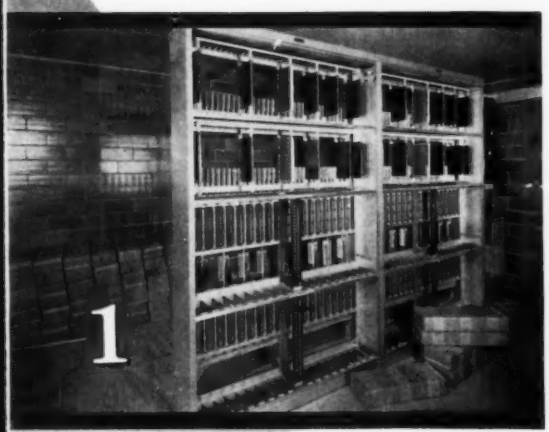

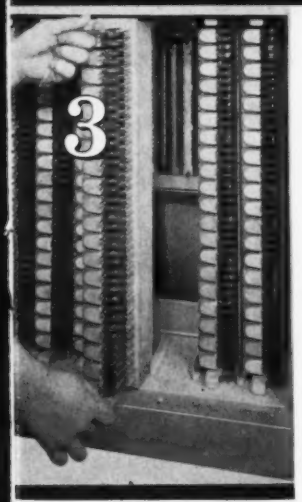

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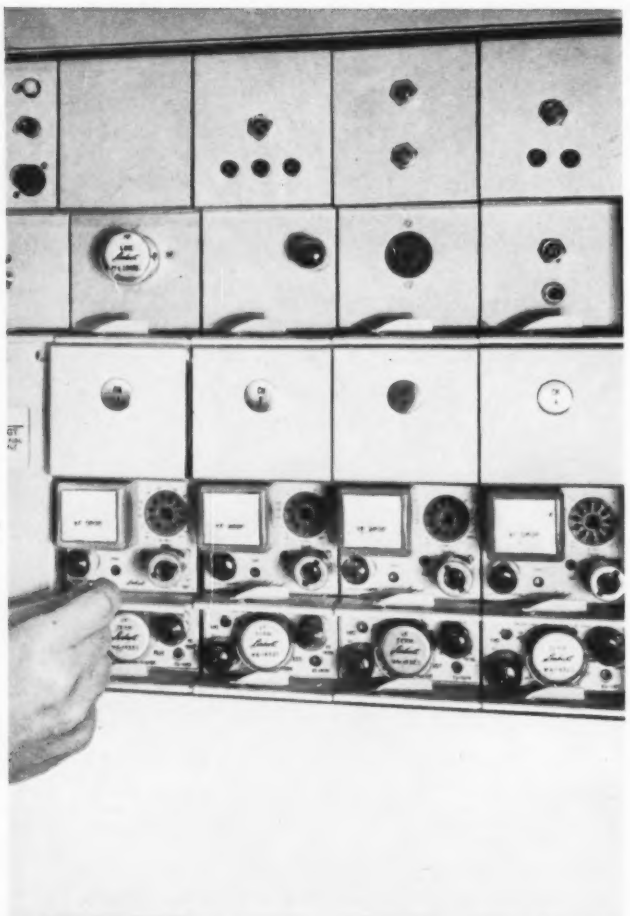

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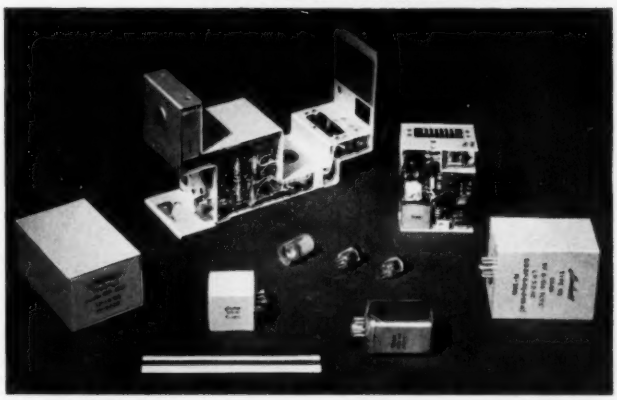
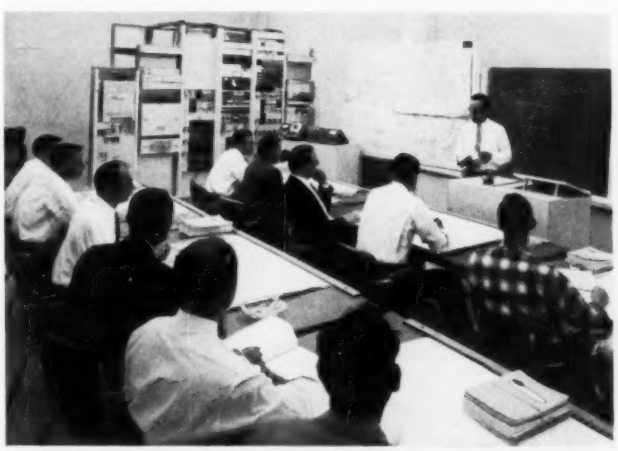


Lenkurt 45-class Carrier channel unit with "plug-in" subassemblies shown removed. Standardized "plug-in" components simplify installation and trouble-shooting. An inoperative circuit can be restored to service in minutes by substituting a good spare unit for one suspected of being faulty. Factory maintains complete unit repair and replacement service.



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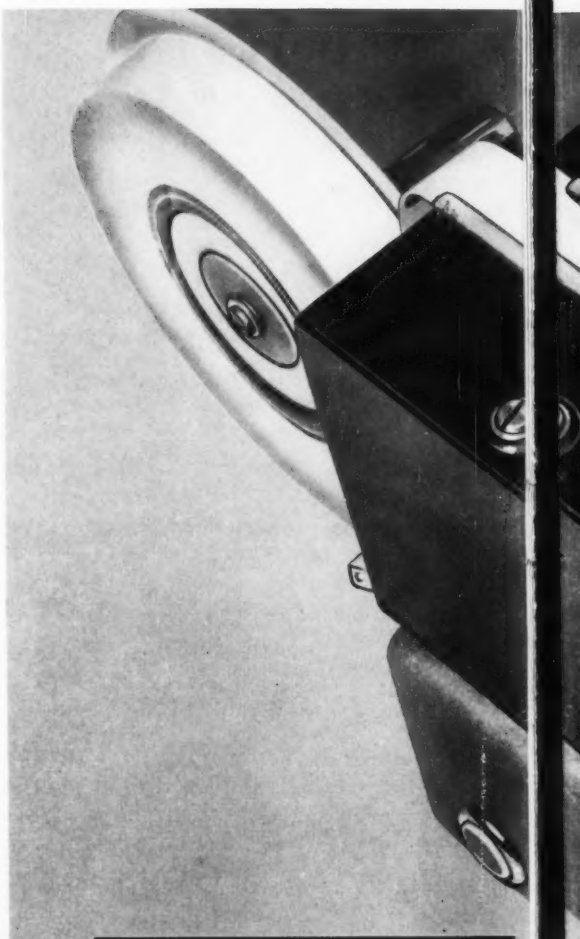

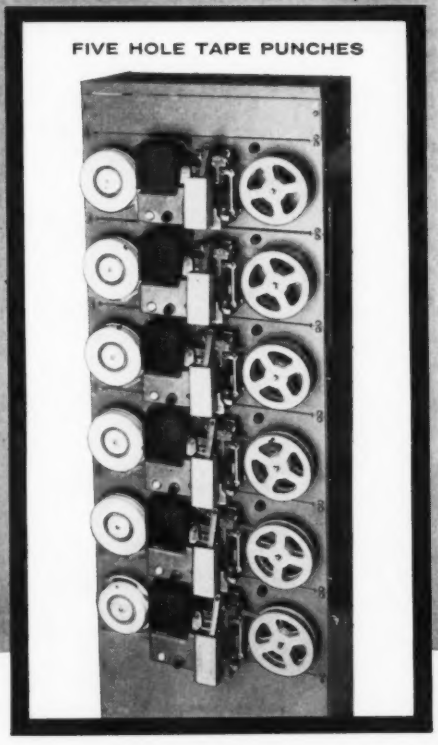

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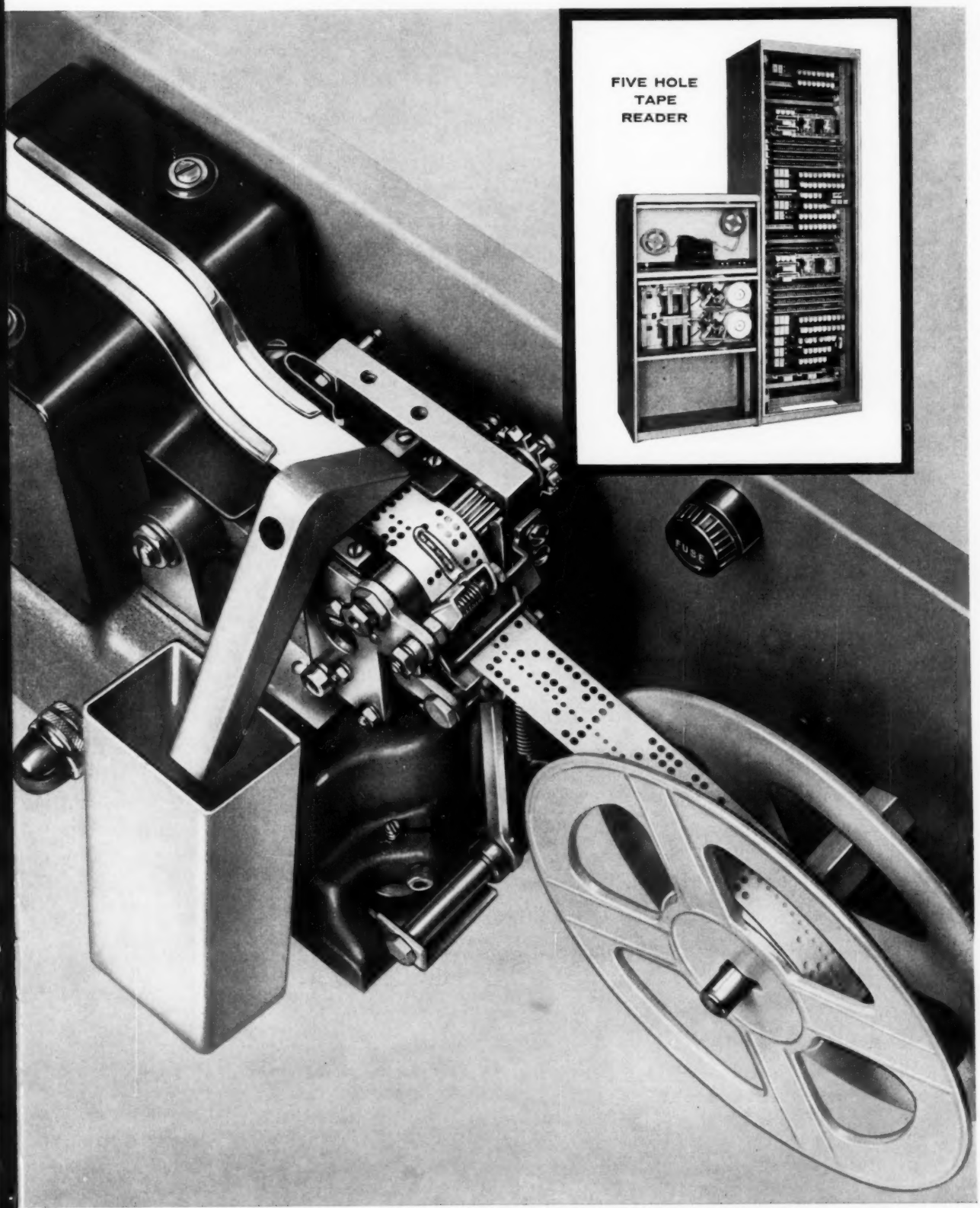
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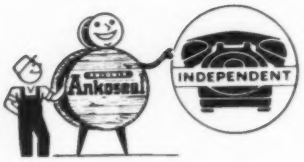

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287-8

IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

House Legislative Oversight Sub-committee might return to its investigation of FCC. California commission calls for "partnership" of Bell company and Independents in serving metropolitan area.

DESPITE the publicity given to the problems of the openhanded Boston textile tycoon, Bernard Goldfine, it is the FCC which has suffered most from the activities of the House Legislative Oversight Sub-committee. Mr. Goldfine had no business with the FCC, as far as evidence to date would indicate. His problems were principally with the Federal Trade Commission and the Securities and Exchange Commission.

But, we cannot forget those stormy sessions last Winter and Spring when revelations of the backdoor pressure on the FCC led to the resignation of one commissioner under fire. And, now that the Near East crisis has blanketed even the Goldfine sensation, the Legislative Oversight Sub-committee, headed by Representative Harris (D., Ark.), is going to take a breather. There may be other reasons, of course. But the record of the sub-committee activity, to date, would indicate that it does not exactly eschew headline publicity.

The question might now arise as to what the future of this sub-committee investigation will be. Will it go on for the rest of the summer? Will it go on for the rest of the year? Will it be extended by the next Congress? Is the FCC in for some more lumps?

As far as money is concerned, the House sub-committee is getting near the end of its allowance so far. As of mid-July it had left only about $20,000 out of the original $250,000 which was voted last year for the investigation. That would not go very far, considering the staff which the sub-committee has assembled, and its other operating expenses. But, it must also be kept in mind that the sub-committee is the child of an old-line standing committee of the House of Representatives—the House Interstate and Foreign Commerce Committee. This committee is also headed by Representative Harris. And, he will see that the sub-committee gets another $100,000, which should let it carry on its work at least through the Fall months—possibly until the end of the year.

But there are other reasons why the Democratic leadership in the House of Representatives may not be too anxious to keep this show on the road too long. The fact is that some of the Democratic congressmen feel the investigators have gone a little too far, already, for strictly political purposes. Bearing in mind the cynical suggestion that at least one objective of the sub-committee investigation was to make political medicine for the Democrats to use in the election campaign next Fall, it is possible that Representative Harris did not turn off the light soon enough.

But, nobody could stop Mr. Goldfine from talking, once he got on the stand; and apparently his multitudinous generosity extended far back of the Eisenhower administration. He began talking about gifts to top officials in the Truman administration. And, of course, that is not the way some of the political masterminds figured the script should read. So, there is some feeling in the House that the investigation has done about as much political damage as could reasonably be expected, as far as Eisenhower appointees are concerned. Why not fold it up before it starts to make trouble for its sponsors?

Regardless of what strategic views will prevail on this point—it is a good bet that the Legislative Oversight Sub-committee will return once more to its investigation of the FCC. The staff has assembled data and charges enough to make some more interesting testimony—or so it is hoped. The Federal Trade Commission and the Securities and Exchange Commission will also have their turn "on the carpet" before the Harris committee winds up its affairs.

The Washington grapevine has it that Representative Harris himself is not too anxious to get after the Federal Power Commission. The reason here is that the charges of so-called "influence" and "pressure" against the FPC revolve mainly around that commission's sympathy for legislation which would remove the natural gas producers from the full jurisdiction of the FPC under the Natural Gas Act. And Representative Harris was, himself, the author of such legislation, not only in this Congress but in the last Congress as well.

Summing up, this reporter would be inclined to surmise that the House Legislative Oversight Sub-committee will keep on going through November—off and on. But it is doubtful whether its life will be renewed or extended by the next Congress, which meets next January.

Bell-Independent "Partnership"

It has been a couple of months since the California commission decided on various rates and exchange practices in the so-called Fresno area. This territory, which is served in part by the Pacific Telephone & Telegraph Co., General Telephone Co. of California, Kerman Telephone Co. and Sanger

Telephone Co., presented a rather unique operating problem. And, after considering the decision more carefully, it appears to this writer that the California commission came up with a rather unique answer.

For one thing, the commission arrived at a concept—new to this writer—which it called a "partnership" arrangement. The purpose is to solve the problem arising from a diversity of ownership and operating interests in the same extended service area. This has become quite an important and pressing consideration, in recent years, because of the steady march to the suburbs and satellite cities from older cities largely served by Bell telephone companies.

As long as Independents could operate, in these suburban or fringe areas, on a self-contained local exchange basis without need for other than a toll connection with the older city exchanges, there was little difficulty. But, the rapid postwar growth, and the filling in of so much of this heretofore "open" area, has led to demands for extended exchange area service, whereby the former suburbanite can dial direct to the downtown subscriber, and vice versa, without extra or special toll charge.

This, in turn, has raised the obvious question: Who's going to serve? Will the Independent companies step up their service standards and try to function in a coordinated way, even where they have become virtual "operating islands" entirely surrounded by Bell System or other larger companies? Or should they sell out to the Bell or other larger companies in the interest of coordinating over-all service as a whole?

This, in essence, is what was involved in the celebrated Menomonee Falls (Wisconsin) acquisition case, now before the FCC for approval. There is no doubt but that Bell and Independent could function side-by-side, under such conditions, if there was a real determination to do so. The California commission has suggested that it might be the duty of the regulatory commission to require such "partnership" operation.

Here is what the opinion stated on this point:

"The question of extended service between Ventura, Fillmore, Oxnard and Santa Paula and possibly other exchanges in Ventura County was discussed at the hearing under Application No. 38099, but these exchanges were not at issue in the proceeding and the commission made no determination with respect thereto.

"Such ruling does not relieve Pacific of future responsibility and assistance when the General company is ready to enter into a partnership arrangement to provide extended service to its exchanges in Ventura County.

"The fact that two or more different telephone companies own exchanges in a proposed extended service area is not sufficient reason to deny the public extended service at reasonable rates. (Italics supplied.)"

The commission order went on to fix rates for each company for each exchange and concluded in its order:

"After analyzing the evidence of record it is the commission's finding and conclusion that the advantages of increased and improved service incident to extended service at this time outweigh the burdens imposed by the authorized increase in rates in the following exchanges: Caruthers, Clovis, Del Rey, Fowler, and Fresno.

"The rates prescribed envision a 'partnership' arrangement between the General and Pacific companies to enable the General company to recover its costs plus a reasonable return on its capital devoted to providing extended service between Fowler and Fresno.

"While such an arrangement has been opposed . . . as unworkable, the commission wishes to point out that the methods now used to determine the costs on toll can be used to determine the costs on the extended service traffic and the revenues pooled to the end that both Pacific and General realize a reasonable return for providing extended service.

"As to the other exchanges, Kerman and Sanger, extended service will not be required at this time but when growth or future conditions warrant this case can be reopened and the Kerman and Sanger companies then can become a part of the Fresno extended area 'partnership.'

"The commission finds as a fact and concludes: (1) That public convenience and necessity require the introduction of extended telephone service in the Fresno area on or before July 1, 1960, between the Fresno exchange and the following exchanges: Caruthers, Clovis, Del Rey, and Fowler.

"(2) That the increases in rates and charges authorized herein are justified and that present rates, insofar as they differ from those herein prescribed for the future are unjust and unreasonable after extended service is available."

Walter L. Wolff, new administrative officer, Rural Electrification Administration. Mr. Wolff will review telephone loan applications, and advise on policies and procedures relating to the telephone program, for REA Administrator David A. Hamil.

What is involved in such situations is a top policy decision, which may have to be made by regulatory authority, if it is not agreed upon by respective company managements. There is no doubt that, on the operating level, a professional operating man would probably prefer to have the service responsibility under a single ownership. There are all sorts of arguments to the effect that this might be cheaper and more efficient, preferable to the subscribers, etc.

It is also likely that a professional operating man would have little sympathy with alternative proposals for dividing or sharing such service responsibility. But, once the decision is made, at a higher level, that a way *must* be found to coordinate service operations under diverse ownership—the professional operating man would find a way—and it would be a good way—to accomplish comparable successful results.

That brings up the real question of whether there are not some over-riding policy considerations, which are paramount to the dollars-and-cents considerations of operating economy, efficiency, etc. There are serious long-range considerations involved here, which might easily prove much more important than anything which could happen at the operating level. These are not easy decisions to make. But the California commission has pointed the way, or at least one way, to do it—partnership! If more regulatory commissions take this approach, perhaps a pattern will emerge which could assume the status of precedent for this difficult and complicated headache of the telephone industry. One thing is certain, this is a headache which is going to get worse before it gets better.

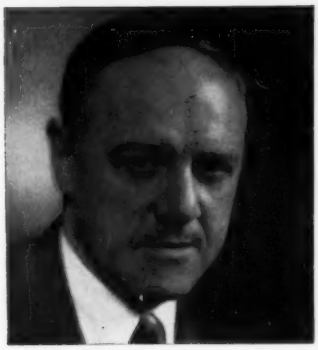
Brief Items

Free speech, as guaranteed by the Constitution, got a big lift from a decision by the Maryland Circuit Court in Baltimore last month. The court slapped down, as unconstitutional, an attempt by Baltimore's mayor, Thomas R. D'Alesandro, to tax advertising in Baltimore's newspapers, magazines and broadcast stations. Several other revenue-hungry cities were watching for

(Please turn to page 50)

today's Highlights

of finance-taxes-business trends



by Willard F. Stanley

UNEXPECTED REVERSAL IN BOND YIELDS: The period from mid-June to mid-July witnessed an unexpected reversal in yields on new offerings of utility funded debt. At the beginning of this period, mildly lower yields on such new issues seemed in prospect. The federal government had just completed a large piece of refinancing on a successful basis. But it was this federal financing which was to explode bond prices and bring about higher yields on offerings. A large amount of the longer-termed federal offerings were evidently bought for speculation on thin margins (which is permissible in the bond market although not as to stocks).

Too many of the purchasers of the federal securities had just gone along "for the ride" and when the market failed to improve they started to unload, thus precipitating a severe decline in prices for federal long-term issues. This lapped over into the market for corporate bonds with the result that whereas double "A" rated utility funded debt was offered successfully at about a 3.8 per cent yield basis around mid-June, before many weeks had elapsed, similarly rated offerings commanded a yield around 4 per cent, which is about the level existing as this is written.

This weakening in the bond market appears of a temporary nature. The Treasury, realizing its adverse effect upon credit and business, cooperated with federal reserve to buy in some 600 million dollars of federal longer-termed debt in the week ending July 4.

This has considerably improved the situation and it would not be surprising if yields on new utility funded debt issues declined somewhat over the next few weeks, although it may be some time before they recover to the levels of mid-June.

This recent episode is a striking example of the impact which federal financing plans and policies can have upon yields on new utility bond issues, and underscores the point we attempted to make in one of the recent columns—that federal financing plans should be watched closely as to timing, and efforts should be made to avoid bringing new utility funded debt to market around the time the federal offering is scheduled to be made.

There seems little reason to believe yields should rise from the July 15 point, but the prospects for drastic improvement in the cost of money to issuers aren't sufficiently attractive to warrant changing present financing plans either by deferral or acceleration.

Mr. Stanley, formerly a utility financial executive, is now president of Corporate Services, Inc. of New York City and is well known as a financial writer. He is a member of the Controllers Institute of America and the New York Society of Security Analysts. He serves on the Finance Management Committee and the Tax Committee of the Controllers Institute (N. Y. Control). His articles are appearing once a month in TELEPHONY.

Common stocks of utilities continue to more than hold their own, marketwise, and it still seems the wisest course for utility management to take advantage of these favorable levels to do any financing in this category which may be necessary for a year to come, or even more. Prices may be higher in the future but they are good enough now not to warrant a gamble on future improvement.

* * *

MYSTERY MARKET: The stock market remains an enigma. After falling off somewhat in late June, in recent weeks it has moved consistently upward and finally pierced the 1958 high. According to the New York Times 50-stock combined average at the beginning of business July 14, the increase in the average price above the Dec. 31, 1957 level was 10 per cent. This compares with around 9 per cent above the year end at June 17.

How account for this recurring strength in the market when indications of an important recession still prevail?

It is true a number of basic economic indicators show moderate gains over the low points reached in late winter or early spring. This indicates a "bottoming out" has occurred. On a seasonally adjusted basis, small but encouraging increases were registered in May in (a) industrial production, (b) retail sales, (c) housing starts, and (d) total employment.

Preliminary data indicate that the advanced levels should be at least maintained in June. Presidential Assistant Gabriel Hauge predicts that the national economy "will mill around in the summer." On the darker side, the seasonal factors will undoubtedly cause declines in steel, automobiles and other lines.

In short, while there is no room for pronounced pessimism, much must occur before unmitigated optimism is justified. And yet the market goes steadily on, acting as if everything is, or will soon be, rosy.

Naturally, "the higher the fewer;" i.e., the larger the price for stocks the greater care required in buying them. Particular industries, such as utilities, food chains, etc., stand out as bucking the downward earnings trend consistently since the recession started, and offer reasonable expectation of continuing to be able to do so. They are the obvious candidates for new investment or switching from more marginal situations.

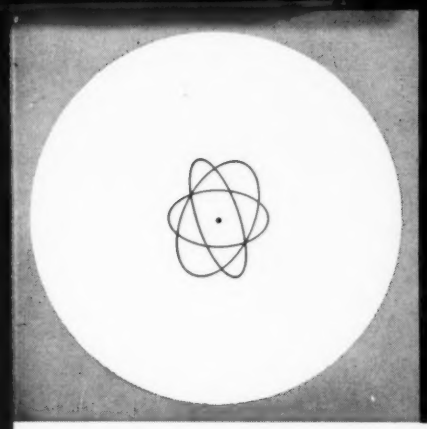
* * *

PHANTOM STOCK: Not many utilities have adopted stock option plans for their key employes, although a steadily increasing number are probably giving this matter consideration. In the industrial field it is, of course, quite prevalent.

A recent alternative to stock options is a plan whereby the key officer or employe, receives from the company, after retirement (when his income and hence his tax rate is expected to be lower) periodic payments representing a distribution of an amount equal to the increase in market value of a specific number of shares of the company's stock which it has "earmarked" for the benefit of the key employe.

This stock is never actually acquired or physically held, owned or set aside for the employe, but is just a paper entry covered by an agreement whereby the company will pay compensation after retirement, in addition to regular pension, based on the amount of accumulated profit in the specified shares from a fixed date to the date of distribution to the employe.

This stock has been referred to by some as "phantom stock," for, as already stated, it is never acquired nor is any profit actually taken. The company simply digs into its pocket and pays the employe a sum measured by the accumulated profit which could have been realized on the stock during the period if it had actually been bought at the beginning thereof. Perhaps a combination of a stock option and "phantom stock" plan would best serve the needs, both of employer and employe.



TELEPHONY'S ELECTRONICS SECTION

BY HAROLD B. McKAY, ELECTRONICS EDITOR

RADAR INTERFERENCE

THE AIR is not only full of aircraft that are running into each other, it is also filled with all sorts of electrical waves that are getting in each other's way. In fact some people are afraid that if we ever get to guided missile warfare, many of the flying bombs are going to be touched off by interference from somebody's television set.

One of the more recent problems has been that of radar interference in telephone company microwave systems. This problem was described by R. D. Campbell in a paper presented before the AIEE summer general meeting in June. An example was cited where radar interference was experienced on the Bell System's TD-2 transcontinental microwave system. Spurious radiations from a radar set 60 miles away entered one of the repeaters.

On a television program, this results in a series of white dashes across the face of the picture; on a telephone circuit, a rough buzzing noise results.

One solution of the problem would consist of locating radar and microwave stations where they would not interfere with each other. However, the problem becomes sticky in cases where microwave legs are used to serve radar stations. Work is being done to design filters to suppress spurious radiations from existing radar sets. As new radars are designed attempts will be made to minimize the interference problem.

FERROMAGNETISM

MAGNETISM has long been associated with ferromagnetic materials, such as iron, cobalt, nickel, chromium and manganese. This has led to an assumption that no ferromagnetism could occur in an intermetallic compound unless it contained at least one strongly paramagnetic element.

However, B. T. Matthias of Bell Telephone Laboratories has discovered a compound which exhibits ferromagnetism at low temperatures even though it does not contain ferromagnetic elements. The compound is a zirconium zinc combination ($ZrZn_2$). This material becomes ferromagnetic below 35°K. Its characteristics are similar to those exhibited by conventional ferrites at room temperatures.

The behavior of zirconium zinc indicates that ferromagnetic compounds may be formed by the combination of many more metals than has been supposed until now. Thus, the discovery opens up an entirely new field for scientific exploration.

TRAINING AIDS

ELECTRONICS students who are taught by a combination of paper and pencil training aids and training on actual equipment perform better than those trained on the equipment alone according to a study made for the Office of Naval Research. Students in a basic electronics course were taught troubleshooting by three methods — training with the actual equipment, training with actual equipment, plus each of two training aids, the Trainer-Tester and the Punchboard Tutor.

Students who used the training aids were superior to those who did not. Advantage of the training aids lay in their ability to teach the intellectual aspects of troubleshooting. A report on this study can be obtained for $1.75 from the Office of Technical Services, U. S. Department of Commerce, Washington, D. C. The publication number is PB 131391.

CONTACT TROUBLE

IT MAY come as a surprise, but one of the principle reasons for the erosion of relay contacts is organic vapor in the surrounding atmosphere. According to the *Bell Laboratories Record*, organic vapors cause increased arcing and increased erosion. The vapors can cause arcs to form when none would form otherwise, and arcs last longer in the presence of vapor than they would in pure air.

Organic vapors may come from several sources; the plasticizer on the wire insulation, or the plastic in the relay structure, as well as the paint on the walls of the building, can give rise to organic vapors which will damage relays. The vapors decompose and contaminate the contact metal by depositing carbon on it. This creates a vicious cycle whereby the carbon will cause arcs and the arc cause further carbon to be deposited and so on.

PAGING SYSTEMS

THERE ARE a number of paging systems on the market today. These range all the way from the traditional lights and chimes that have been used in hospitals and factories to interesting gadgets like the Vibacall. This apparatus, which is made by the AC Spark Plug Division of the General Motors Corp., consists of a console which is used for transmitting and a loop antenna which is

installed in the factory or plant to be covered.

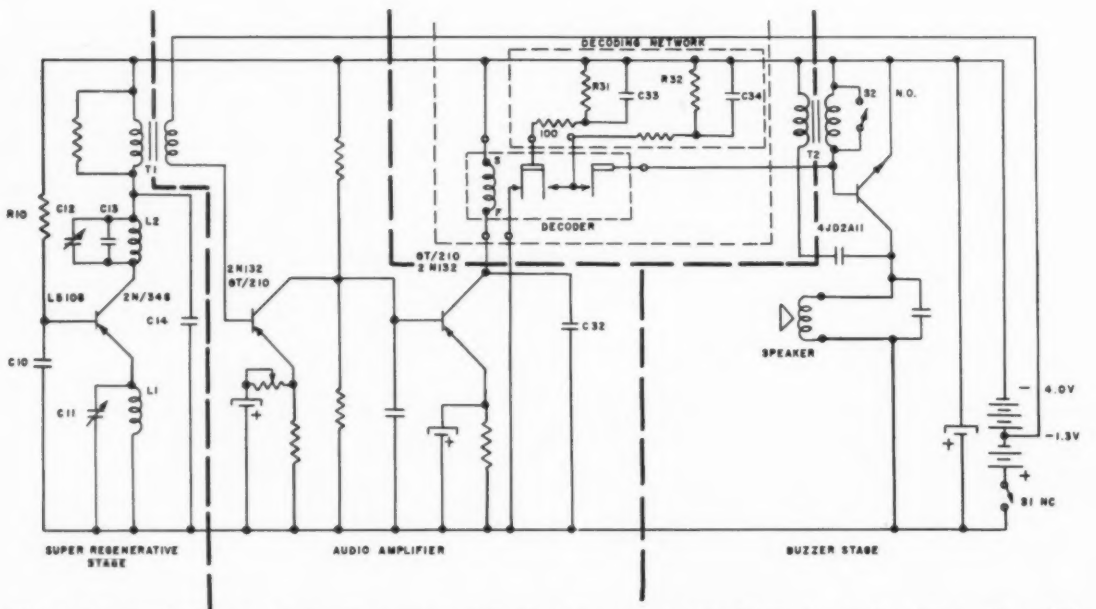
The receiver consists of a small pocket size device which vibrates when the individual carrying it is called. It emits no audible sound. The paged individual feels the vibration. Although it operates on a carrier frequency of 60 kilocycles, an FCC license is not required for its use as its range is limited to about a hundred feet from the antenna wire.

Of more recent interest to telephone companies is the type of system which uses a regular radio transmitter and which is at least city-wide in operation. Experiments are now being conducted with a view towards offering a system of this type as a regular telephone company service.

Different types of radio paging equipment are also available. Some are simple receivers tuned to the radio channel and every user receives every call no matter who it is for. In this type of system the user must listen for his code or name to be called. Of perhaps greater appeal to telephone companies is a paging system in which only the wanted party is signalled.

Probably one of the most highly-developed systems of this sort is the Pagemaster. This was described last month by J. W. Young of the Stromberg-Carlson Co. at the summer general meeting of the American Institute of Electrical Engineers. He declared that the heart of the system is the encoder which is a tone generator controlled by a quartz crystal operating at about 20 kilocycles. A frequency divider network takes the output of this crystal and converts it into nine different tones ranging in frequency from 160 cycles to about 300 cycles per second. These tones correspond to the digits 1 to 9. These tones are transmitted in the combination required by means of an interrupter motor and a set of cams.

The output of the encoder is wired to a radio transmitter which may be at a different location. In industrial applications, the transmitter may be small and rated at from 3 to 30 watts. The system may be also con-



This is the circuit diagram for the Pagemaster. Coil L2 picks up and demodulates the radio signal. The coded tones are amplified and passed to the decoder. When the right combination is received, the reeds in the decoder will vibrate, causing the contacts to make. This will put a charge on C33, pass it to C34, then pass it again to the base of the last transistor. This will start oscillating and sound the small loud speaker. (From a drawing furnished by J. W. Young, copyright by American Institute of Electrical Engineers.)

nected to the higher-powered mobile transmitter of a telephone company.

The receiver is a unit small enough to be carried in the pocket and is powered by three mercury cells. Fully transistorized, it weighs less than one-half pound. Electronically the receiver uses four transistors in a circuit made up of a super-regenerative detector stage, a two-stage audio amplifier and an audio oscillator stage. The latter generates the audible sound which is heard by the user.

In the accompanying drawing, L2 and its associated condensers comprise the antenna circuit; the RF energy is picked up by this coil. As this is a super-regenerative detector the amplitude and phase of the feedback as well as the quench frequency will be affected by L1 and C11.

The output of the detector is coupled through transformer T1 to the two-stage transistor audio amplifier. The output from the second transistor goes into the decoder.

The decoder is a sealed unit which contains three vibrating reeds. These are excited by the magnetic field in the decoder coil. These reeds will vibrate only when the correct frequency for each one is applied to the decoder coil. The frequencies selected for these reeds make up the code for any one receiver. As they vibrate they make intermittent contact with the stationary points.

The audio oscillator, or "Buzzer," requires a triggering pulse to set it off. This pulse is developed from the decoder as follows: If the correct tones are received to cause the reeds in the decoder to vibrate in 1, 2, 3 order reading from left to right, condenser C33 will be charged when reed no. 1 makes contact. If no further pulse were received, the condenser would discharge through R31 when the reed contact opened. However, if reed no. 2 operates before this happens, the charge will be transferred from C33 to C34. This charge would dissipate through R32 unless the third reed makes contact, in which case the charge is transferred to the base of the transistor in the buzzer stage.

Until this pulse appears, the audio oscillator transistor which is a NPN type 2N/169 has no bias applied to the base. The collector load is the hearing aid type loudspeaker and the emitter and the base are tied together through the winding of T2. The collector is also coupled to the primary of T2.

The circuit does not oscillate under these circumstances because the gain of the transistor is less than one and the oscillator is blocked. When a positive pulse is applied to the base of the transistor, it is amplified and returned to the base through transformer T2. This will cause the gain of the transistor to become greater than one and the circuit will oscillate. Once it starts oscillating it will continue to do so emitting a tone of about 1,500 cycles out of the speaker. This is the sound which attracts the user. It can be shut off by pressing a button designated S2, which shorts out the transformer momentarily allowing the transistor to return to its inactive condition.

When the user hears the tone, he calls his office or the telephone operator, or takes some other prearranged action.

A more complete description of the Pagemaster, including block diagrams of the transmitting equipment, are contained in Conference paper 58-814, which can be obtained from the American Institute of Electrical Engineers, 33 W. 39th St., New York 18, N. Y. The price is 40¢ to members of the institute and 80¢ to non-members.

ISOLATION AMPLIFIER

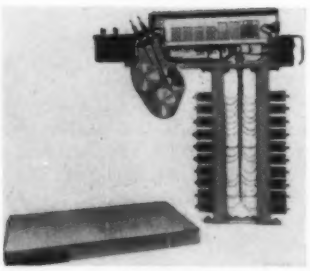
ONE of the difficulties in using things like cathode ray oscilloscopes in the telephone business is that these instruments, which were designed principally for radio, are for use where the reference point is at ground potential. Telephone systems are usually balanced to ground so that neither of the two wires is at ground potential and the use of a grounded instrument may unbalance

Quan-Tech Laboratories Model 202 isolation amplifier.

the line. Other devices such as servo systems and motors, magnetic amplifiers, ac bridges, and circuits employing floating power supplies, may also be impractical to test with grounded oscilloscopes and voltmeters. A new isolation amplifier has been developed by the Quan-Tech Laboratories of Morristown, N. J., to take care of this situation. The amplifier response is ±½ db from 30 cycles to 100 kilocycles, but it is useful at frequencies from 5 cycles to 1 megacycle.

NEW SWITCHBOARD

WHILE automatic and electronic switching techniques proceed apace, the humble manual switchboard has not been standing idly by. The Bell Telephone Laboratories has announced plans for a new communication network for a military theater



The new cord circuit pack used on military switchboards.

of operation. These plans include not only a number of presently available new facilities, such as carrier and radio systems, but also a general switching plan together with means for putting it into effect.

Among the new things is a manual switchboard of advanced design, in which many former manual practices are mechanized. According to an article in the *Bell Technical Journal* for March 1958, an orderly arrangement of switching centers and trunk routes provides for efficient usage of trunk facilities with alternate routes engineered as needed to minimize call delays. Considerable flexibility is built into the system so that rearrangements may be made with a minimum of effort. Rapid installation and dismantling are features of the new equipment, part of which is accomplished by the use of patch cables, which eliminate the need for soldering when an office is installed.

A feature of the switchboard is the plug-in construction used, so that defective trunk equipment or other relay assemblies can be quickly replaced. The switchboard cords feature reels instead of weights and pulleys. The associated relay equipment is mounted on the same frame which holds the cords, keys, and reels, and is called a pack.

The cord circuit is of the universal type. It uses 10 relays and is arranged for automatic ringing, supervision on both cords, automatic flashing recall, manual re-ring, and tripping of ringing during the silent interval after the called party has answered. The cord circuit can be used for station-to-station, station-to-trunk, and trunk-to-station calls.

CONELRAD WEATHER WARNING

THE Conelrad national defense alerting system has been put to a peace-time use, according to the *Kaar Communicator*. The FCC, the Weather Bureau, and the Air Force are cooperating in a joint effort involving the use of Conelrad techniques for broadcasting warnings of tornadoes, hurricanes and floods. You can get a copy of the March issue of the *Communicator* describing this system by writing to the Kaar Engineering Corp., Box 1320, Palo Alto, Cal.

DIAL MOBILE RADIO

A COMPLETE description, including block diagrams of a dial mobile radio-telephone system, is contained in the May 1958 issue of the General Telephone Technical Journal. The article describes what happens on either land or mobile initiated calls and explains how signaling is accomplished. You can get a copy of this magazine by writing to Walter Axelsen, Editor, General Telephone Laboratories, Northlake, Ill.

NEW PANEL INSTRUMENTS

A NEW design in panel instruments has been developed by the General Electric Co. for meters in the 2½ inch and 3½ inch sizes. The meters feature not only a new mechanical design, but have a new type of scale which has high readability. This has been accomplished by using simplified scale graduations and a tapered pointer. Large numerals are used which are positioned above the graduations, so that the pointer does not obscure them.

The dc instruments are self-shielded, which permits mounting on magnetic or non-magnetic panels without special calibration. It also permits the meters to be mounted close together without interaction. The interior construction features a moving magnet design which eliminates zero set. The conventional control springs are replaced by a control magnet. In the de-energized condition, the moving magnet, with the attached pointer, aligns with the control magnet, locating the pointer at zero.

ELECTRONIC SWITCHING

ELECTRONIC switching may be an accomplished fact in the telephone industry a lot sooner than we expect. Basic units and component parts have been in the design and testing stage for a long time, but the scientists are now putting together complete systems.

Ultimately there will probably be more electronic switching systems available than there are mechanical systems at the present time. But, if you are interested in how one such system can be put together, you might order a copy of United States Patent No. 2,809,235.

This patent, which is called simply "Telephone System" was issued to Robert B. Trousdale of Webster, N. Y., and assigned to the General Dynamics Corp. It has 37 sheets of drawings and a 104 columns of printed material, which describes electronic switching. You can get a copy of this Patent Paper for 25 cents from the Commissioner of Patents, Washington 25, D. C.

CAPACITOR KITS

IF YOU have many repeaters, carriers, or other electronic gear around your plant, it may pay you to buy spare parts such as capacitors the way the radio service men do. You can get a kit of Mylar ca-

pacitors containing over 60 different ratings from .0001 to 1.00 mfd, which comes complete in a plastic box. More information on this special deal can be obtained from Cornell-Dubilier Electric Corp., South Plainfield, N. J.

PULSE CODE MODULATION

PULSE CODE modulation is a means of transmitting information over radio or wire lines by means of groups of pulses. This technique is now being explored by the Bell Telephone Laboratories because it offers promise of greatly increased capacity of existing telephone facilities.

For instance a single telephone pair may handle 176 telephone conversations; seven telephone pairs could handle a complete television signal by using pulse code modulation. A maximum rate of 10 million pulses per second is required on each pair.

Pulse code modulation transmits its information by the presence or absence of pulses. For example, if the pulses are sent in groups of six, then any one of 64 different amplitude levels can be represented by the presence of or absence of pulses in the group. If each group contains seven pulses, 128 different amplitude levels can be transmitted. A television picture can be transmitted successfully by converting the signal to pulses of this type.

Normally, pulses at the rate of 10 million per second deteriorate quickly on a telephone pair, so a repeater is necessary about every half mile. A transistor repeater has been developed which can restore the pulses to their original condition after they have travelled through this length of cable.

The pulses are regenerated and do not suffer in the process. No noise is added to the signal; therefore, any number of repeaters can be used and the signal can be transmitted any distance. This is one of the big advantages of pulse code operation over conventional repeaters.

In operation, the regenerative repeaters detect the presence or absence of a pulse in the incoming signal. When a pulse is detected, the repeater generates a new pulse identical to the one originally transmitted, thus, the signal gets a fresh start at each repeater. Repeaters have been developed for this purpose which use only two transistors and require only 200 milliwatts of power. This power can be transmitted along the same pair with the signal.

How To Get Your Money's Worth From Electronic Equipment!

THE TELEPHONE industry is rapidly taking advantage of new developments in electronics. This is only natural. Since the telephone first came into existence, telephone men have been quick to recognize the value of new developments.

Thus it is not surprising that the industry is using more and more electronic equipment. Mobile radio is used to connect telephones in cars, trucks and other vehicles. Microwave relay links are used in place of wire and cable in many places. Electronic carrier circuits and repeaters result in better utilization of existing (and proposed) facilities.

All of these improvements are available today. Tomorrow will see even greater advances. The manufacturers of telephone equipment can be relied upon to give you the kind of equipment you need to fulfill your obligations to your subscribers.

However, you should keep in mind a fundamental principle of management . . . a chain is only as strong as its weakest link. Thus, no matter how big or small you may be, your equipment will not give maximum performance unless it is maintained by competent technicians.

Every company has a technical staff. It may consist of hundreds or perhaps thousands of men . . . or there may be only two or three. These men know and understand telephone technology as it used to be, but in all honesty, do they understand the fundamentals of electronic circuitry?

If they aren't on speaking terms with oscillators . . . rectifiers . . . amplifiers . . . transistors . . . etc., they are not going to be able to give you the technical support you need. A man may be able to wire a central office switchboard in the dark, but if he isn't skilled in the mental tools of electronics, your new equipment will not give you the service you paid for.

In all probability your present staff is very capable. You wouldn't have one which didn't give you the reliability you must have. Therefore they are the logical men to take on the maintenance of electronic equipment . . . as soon as they have received a sound foundation of electronic fundamentals.

This can be done economically and without the loss of valuable man hours by a non-resident training program. Several schools offer this service. They teach your men the fundamentals of electronic circuits. Then, with the ability to understand the principles of any electronic device, your company and the equipment manufacturer have only to conduct a brief orientation of the specialized equipment.

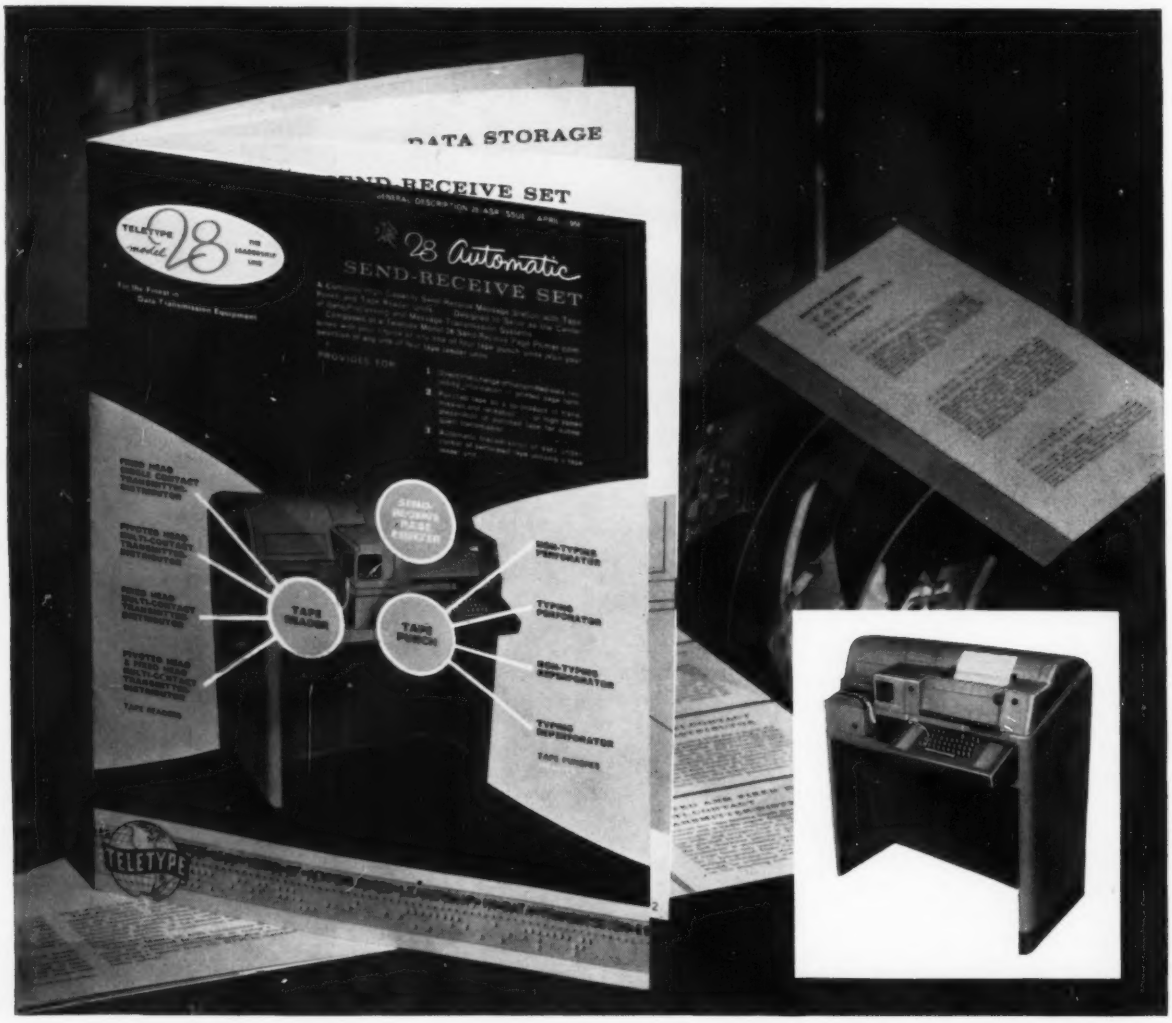
This plan has been used successfully by many companies. It has helped them . . . and it can help you. It will pay you to investigate and get the facts.

For full information on schools providing training in electronic theory and FCC license preparation, write to the National Home Study Council, 1420 New York Avenue, N. W., Washington 5, D. C.

If you would like the details on a "guaranteed" Employers Plan for training technical personnel, write to

The Registrar
Cleveland Institute of Radio Electronics
4900 Euclid Avenue,
Desk TE-21
Cleveland 3, Ohio

Accredited by National Home Study Council



FREE– Teletype booklet ...details new 28 ASR

Contents—Includes information on:

- Automatic communications
- New transmission speed
- Tape punching
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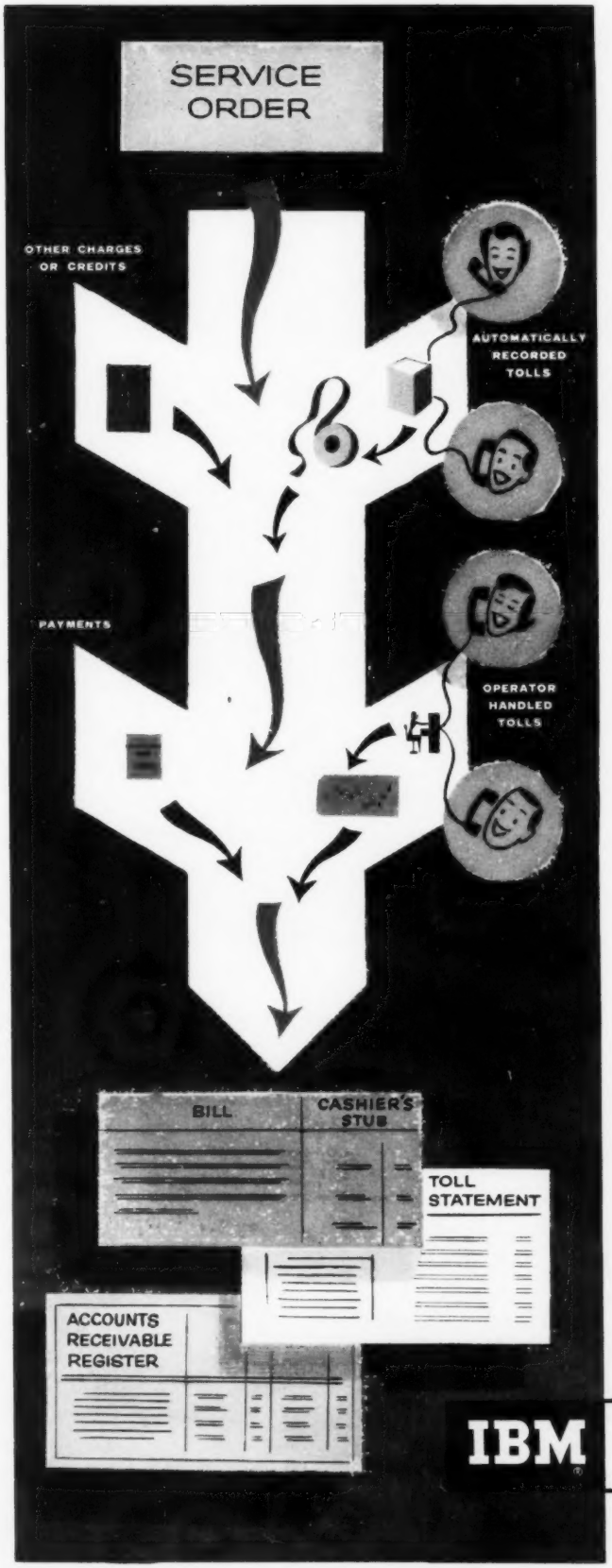

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There's an Adequate Supply of Wood Utility Poles

By R. C. WILSON and J. F. CHRISTOPHER*

THE NATION'S timber is being increasingly drawn on for many commodities and here and there one hears rumors of impending shortage. What is the situation in respect to poles? Can consumers depend on timber to meet their continuing needs? From the standpoint of timber supplies the answer is yes!

Wood utility poles have long been preferred for many reasons. Poles are easily produced at a relatively low cost in practically all sizes the market demands—for telephone lines, for heavy transmission lines *(Fig. 1)*, and for various construction uses. Many species of wood have the strength required for these uses. And, through the use of modern preservatives, wood of almost any species can be made resistant to decay.

Although never seriously challenged by other materials for most uses, substitutes for wooden poles are frequently used, partly perhaps in anticipation of possible wood pole shortages in the future. Therefore, information on present and prospective availability of timber meeting specifications for poles is believed to be highly pertinent to utility companies and other users.

Poles Small Part of Cut

In the past decade about 6 million wooden poles have been used annually in the United States *(Fig. 2)*. Use of piling has averaged slightly more than 40 million linear feet a year during this period (or about 800,000 piles, assuming an average length of 50 feet). Thus, the combined pole and pile production represents the cut of about 6.8 million trees annually. Although the timber cut for poles and piles thus is appreciable, it is only slightly more than 1 per cent of the total volume of wood cut for all industrial purposes such as saw logs, veneer logs, and pulpwood.

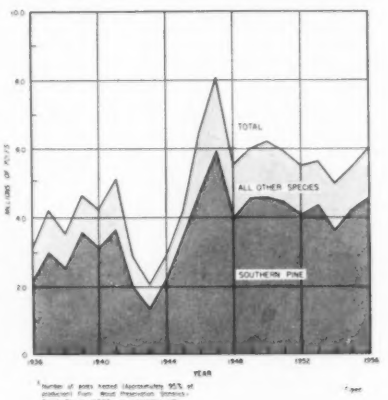
Recent forecasts of demand for timber products in the future made by the Forest Service[1] (see footnotes at end of this article) show that the total volume of wood required for all industrial purposes is increasing. It is estimated that by 1975, for example, potential demands for industrial wood may be from 25 to 40 per cent greater than in 1952. Potential demand for poles by 1975 is estimated to be slightly more than it is today—or about 6½ million poles.

Timber Growth Increasing

Growth of timber also is expected to increase, and to be greater than total domestic cut for timber products for some time in the future. This favorable immediate outlook is based largely on continuing progress in forest management, including rates of tree planting, forest fire and pest control, and more complete utilization of logging and mill residues.

In the longer run, growth may fall short of potential demands unless forestry efforts are materially accelerated. As virgin stands of large timber in the West are depleted, such products as high-quality lumber and veneer will no doubt be in much shorter supply. But other products such as poles will

POLE PRODUCTION IN THE UNITED STATES[1] 1936-1956



[1] Number of poles treated (Approximately 95% of production) from Wood Preservation Statistics, Forest Service, USDA, in cooperation with American Wood-Preservers' Association.

Fig. 2

*In charge of Forest Inventories, Division of Forest Economics, U. S. Forest Service; and Research Forester, Division of Forest Economics, Southern Forest Experiment Station, respectively.

Fig. 1. Wood poles support many transmission lines throughout the country. Modern preservatives insure durability for the various woods, such as southern pines and Douglas-fir, which have natural qualities of strength, size, and form necessary to carry heavy loads under stress. This power line near the Canadian border has weathered many high winds and winter storms.

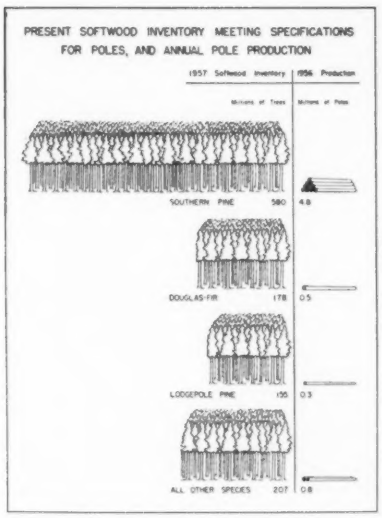

PRESENT SOFTWOOD INVENTORY MEETING SPECIFICATIONS FOR POLES, AND ANNUAL POLE PRODUCTION
1957 Softwood Inventory
1956 Production
Millions of Trees
Millions of Poles
SOUTHERN PINE 580 4.8
DOUGLAS-FIR 178 0.5
LODGEPOLE PINE 155 0.3
ALL OTHER SPECIES 207 0.8

Fig. 3

continue to be available in substantial quantities in younger stands of timber.

Prices Favorable to Landowners

Prices for poles are holding their own in the present price structure for all forest products. Most buyers are paying prices for poles which are at least as attractive to the timber owner as those paid by producers of other products. One recent study[2], for example, showed that a southern pine growing in Arkansas, large enough to yield a 50-foot, 'ASA Class A pole, was worth $10 to the owner, if sold as a pole and only about $9.00 if sold as saw logs. The stumpage value for pulpwood was of course considerably less.

The relatively favorable prices for poles are related to the continuing strong demand by utilities that are both maintaining and expanding telephone, telegraph and power lines. These prices also reflect increasing demands for poles for such uses as foundations and framings for barns and other rural structures.

The relative prices for these products in the future will depend as they do today upon a number of factors, including the relative demands and preferences for various wood products compared to other materials. The relative abundance of timber suitable for poles also is of particular importance. It is, therefore, appropriate to examine more closely present and prospective future supplies of trees suitable for poles.

Large Inventory for Poles

It is estimated that there are at least 1.12 billion softwood trees clearly suitable for poles growing on commercial forest lands in the continental United States. These are trees between 7 and 19 inches in diameter breast height that will produce poles of standard specifications in lengths 20 feet or longer. This inventory includes trees suitable for poles in virtually all ASA classes.

No estimate is made of the number of other softwood trees that do not quite meet ASA specifications, nor of large numbers of hardwood trees suitable for poles.

Over one-half (52 per cent) of the inventory of trees clearly suitable for poles is in species of southern pine.

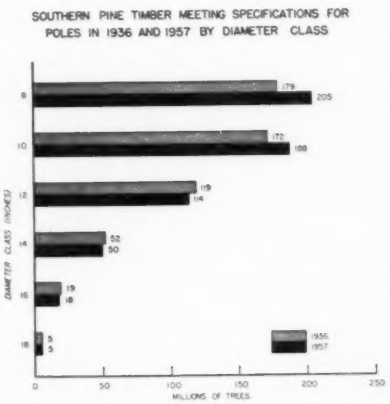


Fig. 5

Douglas-fir contributes the next largest portion (16 per cent) of the total, followed by lodgepole pine with 14 per cent. All other soft woods comprise the remaining 18 per cent *(Fig. 3)*.

This inventory, estimated from information collected by the nationwide Forest Survey project of the Forest Service, is greater than any previous published estimates. It is 60 per cent greater than the estimate by the American Forestry Association in 1946 of 683 million softwood trees suitable for poles[4]. It is approximately 20 per cent greater than the estimate by I. V. Anderson in 1947 of about 926 million softwood trees suitable for poles[5]. These earlier estimates excluded trees suitable for small and poor quality poles. The first estimate also excluded certain species such as spruce, larch, hemlock and true firs.

A comprehensive inventory of pine poles in southern states also was made in the late 1930's by the Southern Forest Survey[6 7]. This inventory indicated that 547 million southern pines were suitable for poles. Standards of classification were essentially the same as those used in deriving the current estimates presented in this report.

Over Half of Supply is Southern Pine

An estimated 580 million southern pine trees, growing in parts of 16 states *(Fig. 4)* are considered suitable for poles under today's specifications. This is an increase of about 10 per cent over the inventory of all sizes in 1936.

Southern pines have dominated the pole market for many years and furnish about 75 per cent of the total national production *(Fig. 2)*. Southern pine is produced close to large consuming markets. Consequently most of the several hundred plants for full-length treating with preservatives are found in southern states. Preservatives penetrate pine easily and these hard pines are strong and relatively light.

Because of relatively small size, southern pines have met and are meeting most of the demand for small and medium poles *(Fig. 5)*. Trees less than 15 inches in diameter comprised 95 per

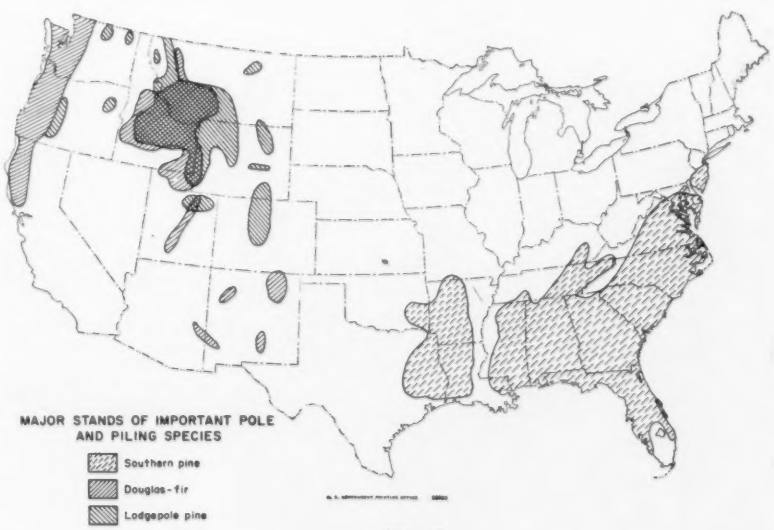


Fig. 4

cent of the inventory in 1936 and comprise 96 per cent of the inventory today. More than 90 per cent of both inventories would yield pole lengths of 35 feet or shorter. These are the lengths that make up most of the production of poles, as indicated by the following sample of poles received at southern treating plants in 1956:

Length class (feet)	*Per Cent received*
20	6
25	16
30	17
35	29
40	18
45	7
50+	7
All classes	100

In contrast to an increase in total numbers, pines larger than 15 inches in diameter decreased about 10 per cent between 1936 and 1956. This reflects the heavy cut of pine sawtimber and a decrease in supplies of timber suitable for large saw logs. It does not necessarily imply a shortage of trees suitable for large poles. Cutting of poles is a selective process, frequently utilizing the best trees in the stand. And the cut for poles of all sizes is only about 2 per cent of the annual cut of southern pine for all uses. The majority of pine poles are produced in the Gulf and Coastal Plain areas where the proportion of forest land is highest and where large, tall trees predominate. These are the same areas where the increase in numbers of pine trees between 1936 and 1957 has been the greatest. Significantly, these also are areas where forest holdings are being managed most intensively.

Fig. 6. Loblolly pine stand about 40 years of age. Most of the trees shown here are suitable for poles. Loblolly and other southern pines have supplied the lion's share of these forest products for decades. Because of their rapid growth, good form, large numbers, and nearness to markets, southern pines are expected to supply the major demands for utility poles for years ahead.

Managers, here, as in many other forests in the South, aim to produce more than one forest product. By integrated utilization of the wood resource they are getting greater returns per acre than by production of only one product. They appraise each stand before cutting and tailor their cuts to convert as much of every tree as possible into the most valuable product or products. By cutting saw logs, poles, piling and pulpwood from the same acre, they insure that each unit of wood finds the most valuable market its quality will command.

These and other recent improvements in forest management, such as the greatly increased rate of forest plantings, help insure a continuing supply of southern pine. Another reason why the supply outlook for pine poles is favorable, is the remarkable capacity of southern pine lands to produce timber, despite attrition on many of these lands in the past—due to overcutting, wild fires or other abuses. Many southern pine stands now between 20 and 50 years of age seeded naturally on old fields or deforested areas. Because of rapid growth these young forests now contain large numbers of trees suitable for poles *(Fig. 6)*. An acre of well stocked 30-year-old loblolly pine, for example, supports over 200 trees 7 inches and larger in diameter, including about 30 trees which are 12 inches and larger in diameter.

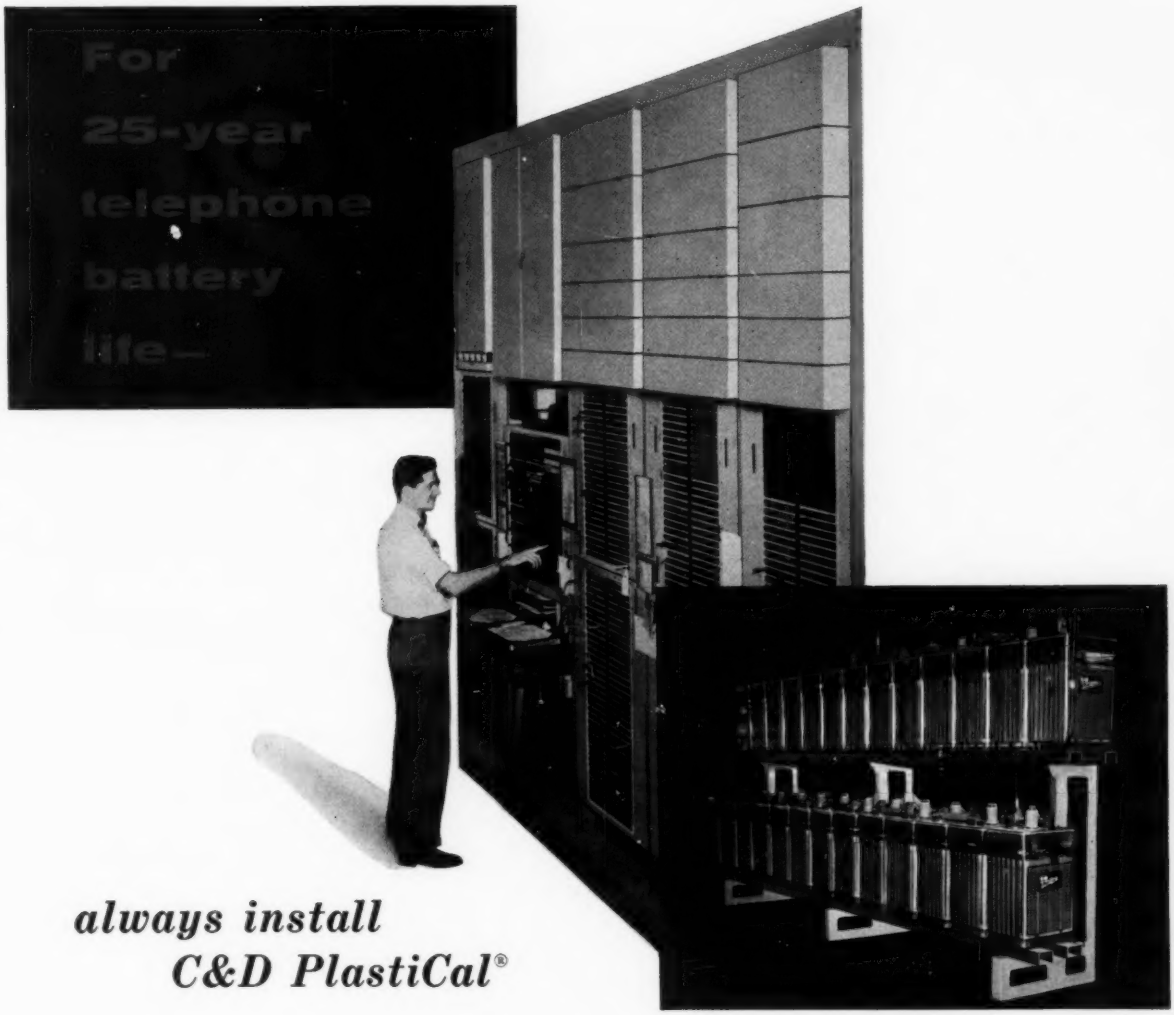
Fig. 7. Douglas-fir young growth large enough to yield several hundred utility poles per acre. Douglas-fir stands managed for sawtimber also yield intermediate selective thinnings prior to the main harvest of saw logs. These intermediate cuts will yield valuable utility poles.

Douglas-Fir Next Largest

Next to southern pines, Douglas-fir represents the largest supply of timber suitable for poles. The 178 million trees shown on *Fig. 3* represent that part of the Douglas-fir inventory most suitable. This is only a very small fraction of the huge inventory of Douglas-fir trees of all sizes.

For various reasons, this species has contributed a much smaller part to the cut for poles than have southern pines. The Douglas-fir region is farther from large consuming markets in the Midwest and East. Until recently most Douglas-fir timber also has been virgin old growth in large sizes suitable for saw logs or veneer logs. However, numbers of smaller trees in young-growth stands have been steadily increasing. These make good poles since

(Please turn to page 56)



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Who Says YOU Can't Concentrate?

By William J. Milford

THE BUSY DAY of every telephone company executive is loaded with hundreds of enemies of concentration in every form and shape. Yet there must be concentration—and a considerable amount of it—during that business day.

Concentration is and has always been one of the most difficult of executive tasks. With some men it comes easy while with others it generates headache after headache. There should be no cause for the latter. Concentration is an executive ability that can be developed; it's not an inherited asset of a chosen few.

"But I've never been any good at concentration," a business-man friend told us the other day, "it's the toughest thing I have to do—I'm just not the kind who has the ability to concentrate easily."

During the past year we've asked several score other executives about that. Practically the same answer came from each man with whom we talked —but we'll let the words of one in particular speak for all.

"That poor man is making his work a hundred times more difficult than it should be," he declared, "and he's as wrong as a man can be about there being a specific kind of business executive who can concentrate easily. It's simply a matter of study and training —knowing what to do and how to do it—and going about concentration with the same drive you give any other executive task."

How to go about it? From the aforementioned men we secured a number of suggestions which the uneasy executive we quoted first, and all others who find concentration difficult, can use to good effect.

Make your mind stay put. Concentration means focusing specific and all-out attention on the matter at hand. We must, with our own will power, force our mind to stay put on that specific subject each time the need for concentration comes up.

Intensify attention. That's the necessary first step in devoting all-out interest to an executive chore. Unless we start with an intensified attention to the problem, few other concentration aids will be of value.

Direct attention to the desired objects. Every problem that crosses the executive desk has specific phases, facts, or ideas which comprise its essential backbone. If we definitely separate these—even list them on a note pad if necessary—we have guideposts toward which to focus our attention. Attempting to handle any difficult problem while wandering all over the field seldom gets anything done—concentration comes when we focus our interest specifically on definite and desired objectives involved in the problem at hand.

Stick with it until the job is done. When we have intensified our thinking processes and directed them to the problem, good concentration calls for sticking rigidly with the job until it is done. Real enemies of concentration are present when we permit our focused attention to waver from time to time through the problem. We can't take side glances, look out the window, or across the room at our beautiful secretary—all efforts must be rigidly focused on the completion of the job. That's real concentration and it gets results every time.

Think first before starting concentration. Rare indeed would be the baseball pitcher who could step up and mow the opposition down without a pre-game warm up. We usually find our concentration comes easier and better when we take such a warm up too. One method consists of thinking a little, in relaxed fashion, about the problem before we begin our actual concentration.

Get into the right posture. There are schools for posture everywhere. It's taught as an important part of sports, the arts and just about every phase of life. Posture is important in concentration too. Sitting up straight (slumping over the desk asks for indecisiveness), sitting forward, keeping one's shoulders back, setting our eyes on the work, relaxing our legs and acting expectant—all these are important to the right posture in good concentration.

Group those executive tasks. Grouping tasks to help concentration is set procedure by every executive with whom we have talked. Planning one's work so that similar tasks are done in a group makes the job of concentration easier than if we attempt to tackle them one-by-one.

Believe in yourself. Good concentration, it has been definitely proven, requires positive belief in oneself, one's ability to handle the job at hand and in one's capacity to concentrate to the extent required in each situation.

Don't let interruptions throw you. Few executives can ever hope to work through on the specific job of concentration without an interruption or two. Taking them in stride is a must in the art of concentration. Easiest way, we are told, is to think more about what you are doing and less about the interruption. Settling, immediately where possible, the problems which brought about those interruptions, is also good procedure; it helps us get back on the trail of concentration before the scent gets cold.

Expect and accept some "blind spots" in your thinking and concentrating processes. Some executives feel these are failures in their ability to concentrate. They are nothing of the sort. Researchers have proven that it is perfectly natural for the mind to seem to go blank under such cases of extreme concentration. They are nothing more than nature's way of forcing a mental rest period. When such blockings become noticeable, then and there is the time to take a rest—trying to work through them only causes errors and usually leads to complete inability to concentrate at all.

Be sure of interest before the job of concentration is started. It's extremely difficult for even an expert to do a good job of concentrating on anything in which he has little interest. A definite interest is a must to good concentration. It pays to find that interest (where we do not have it) before we ever start on concentration.

Keep the goal in sight—always. Losing sight of the goal in a long and difficult problem makes concentration on that problem extremely difficult. Keeping the goal we are after always in sight not only makes concentration easier but usually facilitates swifter thinking as well.

Work against deadlines—this always helps concentration. It calls into play other physical and mental factors we need to get the job done, makes it easier to fight natural distractions, and easier to avoid flight of ideas, dilly-dallying and similar all-too-prevalent distractions.

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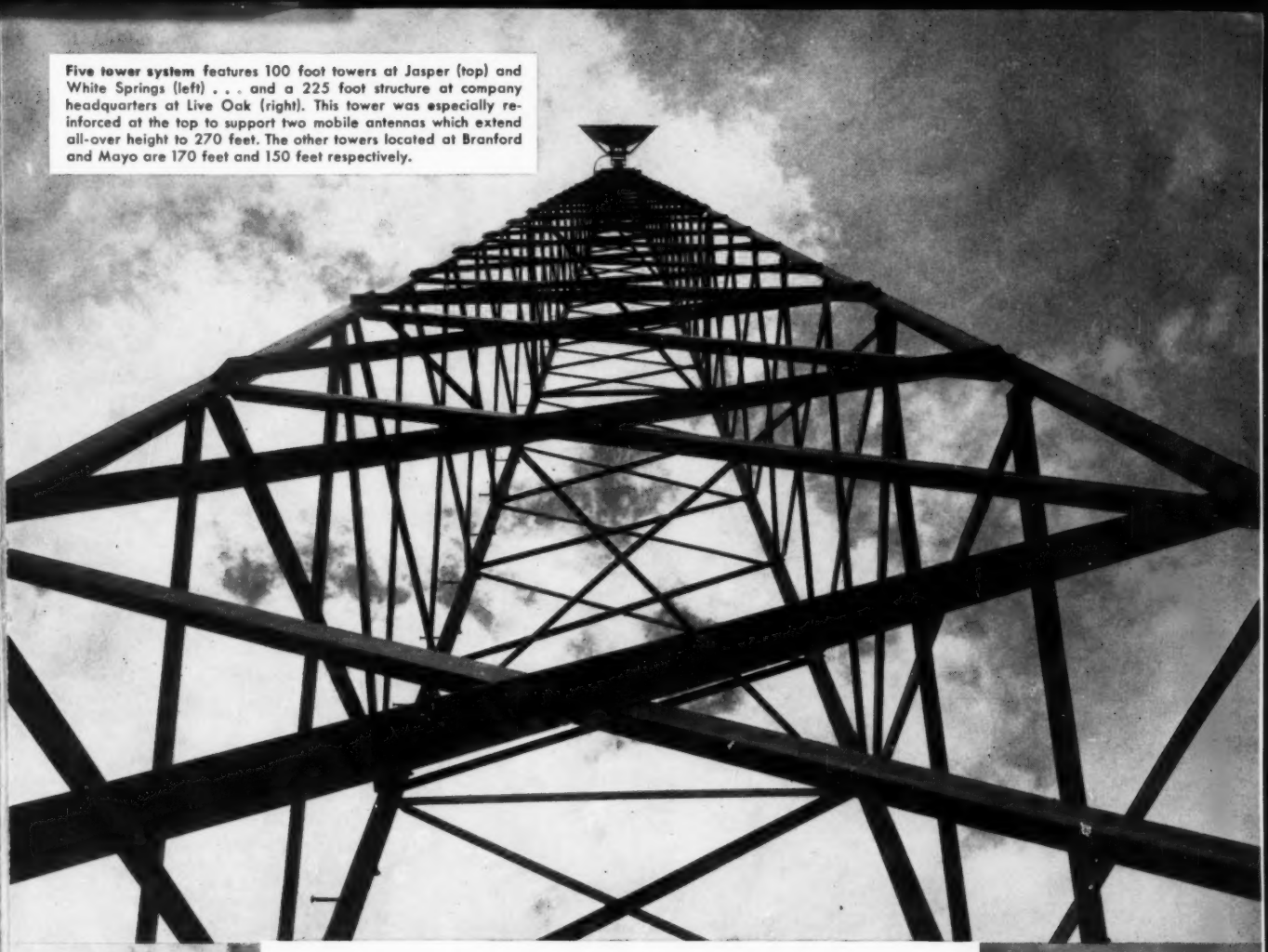

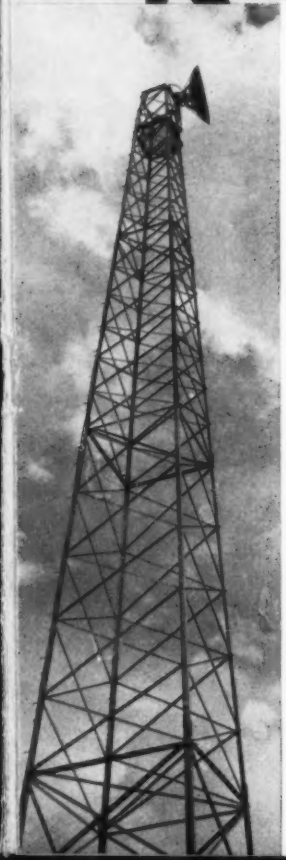

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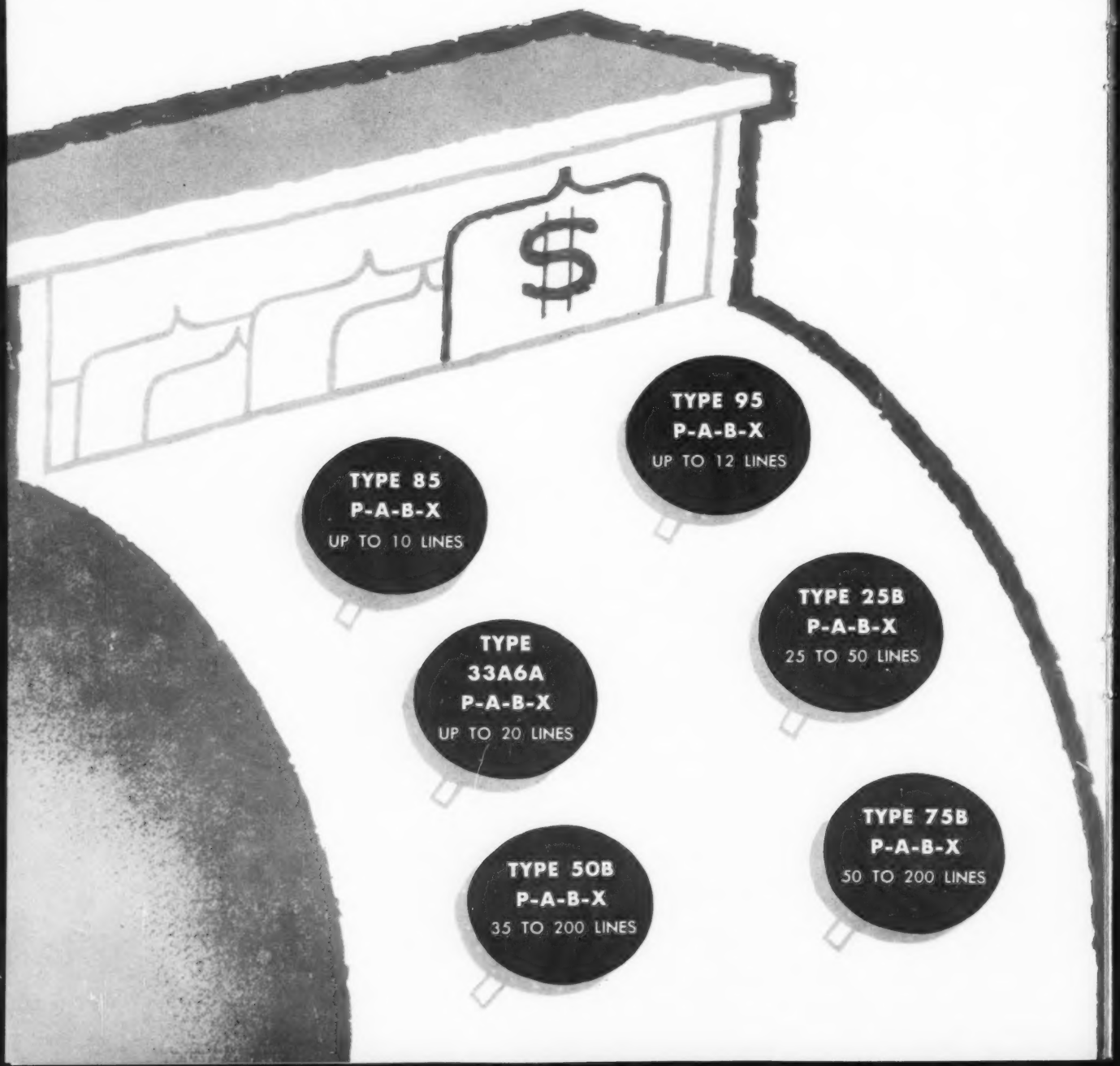

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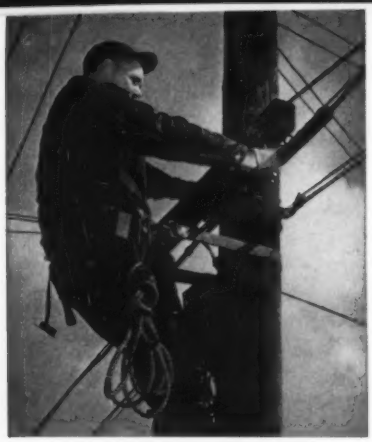

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

ONCE upon a time there were two Irishmen whose names were not "Pat" and "Mike." These two individuals were, however, both good telephone men.

But, in order to start at the beginning—back in 1956—we must tell you that the writer received a letter from Noel Jones, of the Department of Posts & Telegraph, in Dublin, Ireland, in which he sought certain information on cable load coils. Because he used many terms in his letter which were entirely foreign to our telephone work, we were not entirely clear as to exactly what information was required.

Knowing that our good friend, Dermot K. Foley, who works for the Pacific Telephone & Telegraph Co., in Inglewood, Cal., had been born in Ireland, we forwarded the Jones letter to him for interpretation. This he did in a most satisfactory manner and we were able to pass on to Mr. Jones the information he desired.

Then Foley wrote Jones direct, never mentioning the fact that we had sent him the first letter—this came later. The telephone man in California and the one in Ireland began exchanging telephone publications and literature and in the course of this correspondence became well acquainted with each other.

In one of these letters, Jones mentioned that it was necessary for him to go to London, England, to take an examination for a job in Rhodesia with the South Africa Telephone Administration. He explained that he planned on leaving Ireland because of the restricted chances for advancement in a small telephone system (160,000 stations).

Foley then checked on station development in South Africa and learned that there they had considerably less than Ireland.

When Foley relayed this information to Jones, he asked him if he had ever seriously considered coming to the United States. He told him that here "the sky is the limit" as far as progress is concerned.

Jones replied that there was no place on earth he would rather be than in the United States, but he had never considered it as a possibility since, under the State Department's rules, it would be necessary for a permanent resident of the United States to sponsor him. He had no friends or relatives here. Foley then offered his services as sponsor, made the necessary arrangements, and Jones arrived in Inglewood, Cal., in November 1957.

Jones brought with him an impressive array of trade and technical school diplomas, covering the many and varied courses of study he had successfully completed in telephone theory and practice in Ireland. He is a young man dedicated to the telephone business, and it is his consuming interest in life toward which all of his waking moments are directed.

He comes by this naturally as his father was a life-long telephone man in Dublin, Ireland. The father retired from the Department of Posts & Telegraph — Telephone Section — as an installation foreman. He served under both the English occupation forces and the Irish government.

When Jones arrived in California, Dermot Foley took him under his wing and helped him get properly settled. He also explained telephone work as it is performed in this country and advised him on how he should seek employment. He finally decided to try the General Telephone Co. of California, and his experience in going through the mechanics of becoming an employe of that company made a lasting impression. He applied to their general employment office at Sixth and Arizona Sts. in Santa Monica.

He later informed us that his first impression was one of great friendliness. The beautiful building radiated friendliness, even from the outside. His first contact was with the female receptionist, a charming lady who caused him to feel completely at ease. She then outlined the various routines of being placed on the payroll.

The first interviewer was a relaxed, friendly sort of chap who explained that General was at present employing only men with previous experience and in the category of station repairman, for which he qualified as the result of his previous training. Next came the adaptation tests, physical examination, and work assignment interview, following in rapid, efficient sequence.

His final contact at the employment

Traffic Engineering Handbook

Due to requirements for space in this issue, "TELEPHONY's Traffic Engineering Handbook," by Gilbert R. Brackett, will not appear. However, the series will be resumed in the August 2 issue.

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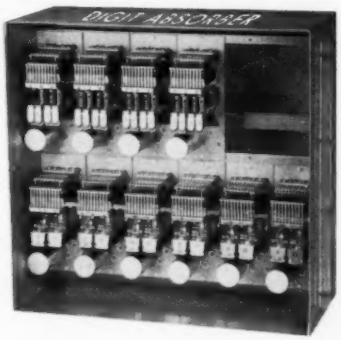

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Few dial switchboards of earlier design have provisions for adding digit absorbing features economically. The Universal Digit Absorber fills this need easily and at nominal cost. Installation requires very little time and does not interrupt service.

The ever-increasing requirements of Extended Scope Dialing on a universal numbering arrangement are easily handled by the Universal Digit Absorber. The Digit Absorber is a factory assembled, fully-wired, applique unit that can be connected to any existing dial switchboard to pad in three digits of exchange code (ABX) or four digits in the case of a three digit dial board.

There are two types of Universal Digit Absorbers, depending on the complexity of the exchange codes assigned:

19-S unit will handle exchange codes, as illustrated by AB-X, where the "X" digit is not a duplicate of the "A" or "B" digit.

19-L unit is required where the "X" digit is a repeat of either the "A" or "B" digit.

In addition, Universal offers a Trunk Digit Register which can be applied to "Trunk on Line" dial boards where five or more digits are required to be delivered to a 3 or a 4 digit tributary exchange. This unit also affords added link hunting time and safeguards against partial digit registration.

* Pat. Pend.

FOR FULL PARTICULARS
PLEASE WRITE DIRECT TO
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OR CONSULT YOUR DISTRIBUTOR
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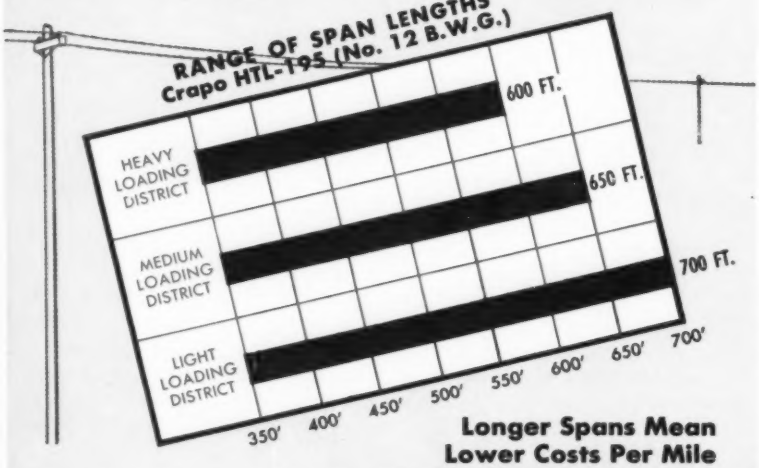
Crapo

HTL-195

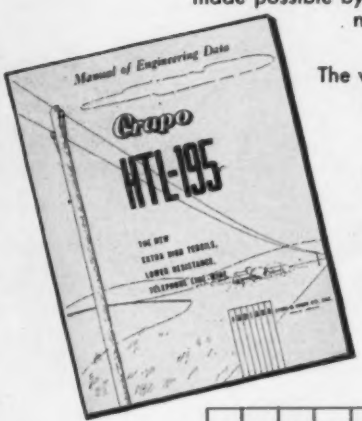
FOR EXTRA LONG SPAN RURAL LINES

The *NEW LOWER* Resistance Extra-High Tensile Line Wire



Longer Spans Mean Lower Costs Per Mile

You can cut the number of pole structures to a minimum when you use **Crapo** HTL-195 in building rural telephone lines. Extra long span construction, made possible by the high physical strength of this new wire, means marked savings in material and installation costs.



The voice transmission quality of **Crapo** HTL-195 is equal to that of **Crapo** HTL-135 and superior to older grades of ferrous wire.

Pertinent technical data have been prepared to assist engineers in designing and building extra long span lines with **Crapo** HTL-195.

WRITE TODAY for FREE COPY of the CRAPO HTL-195 "Manual of Engineering Data" No. A-195

INDIANA STEEL & WIRE COMPANY, INC.
MUNCIE, INDIANA

office was with the receptionist who gave him a card to present to his foreman at the Colorado Ave. Garage the following Monday morning. In parting, the lady shook hands with Jones saying: "We are glad to have you with us at General."

Now that Jones has been on the job over six months with General he informs us that he continues to find the same friendly, cooperative attitude among supervisors and fellow workers that he first experienced in the Santa Monica employment office. Moreover, it has been made possible for him to enroll in an outside plant engineering course, sponsored by the General company, and conducted by the Santa Monica City College. The students attend school there two nights each week on their own time.

We cannot help but feel a little proud of the fact that TELEPHONY has played a small part in helping such a deserving young man improve his station in life. We say a small part because the real credit goes to Dermot Foley for his untiring efforts in making all of the arrangements.

We are proud, too, of the fact that the Independent telephone industry, in general, and General Telephone Co. of California, in particular, has obtained the services of such a fine, worthy, young man. May the telephone career of Noel Jones be long and happy and his accomplishments many!

•

A miniature, scintered-plate, nickel-cadmium storage battery is now available for use where size and weight are important factors. This cell, slightly larger than a package of cigarettes, is ideal for use where a "big wallop-small package" is required.

This battery can be recharged in five hours. It will deliver 25 times capacity instantaneously; 18 times capacity for 10 seconds, and 12 times capacity for one minute. It has excellent shock-proof characteristics, exceptionally long cycle life, and may be discharged in any position.

•

The Radiant Life, written by Elbert Hubbard, reads as follows:

"I wish to be simple, honest, frank, clean in mind, and clean in body, unaffected—ready to say 'I do not know' if so it be—to meet all men on an absolute equality; to face obstacles and meet every difficulty unafraid and unashamed.

"I wish to live without hate, whim, envy, or fear. I wish others to live their lives, too—up to their brightest, fullest, and best. To that end, I pray that I

may never meddle, dictate, interfere, give advice that is not wanted, nor assist when my services are not needed. If I can help others, I will do it by giving them a chance to help themselves; and if I can uplift or inspire, let it be by example, inference, and suggestion, rather than by injunction or dictation. I wish to radiate life."

•

J. E. Trainer, of the Firestone Tire & Rubber Co., in discussing the rewards of safety work said:

"You can always remember that in safety you protect, not a camera, but the human eye; not a pump, but the human heart; not a compressor, but the human lung; not oil and grease, but human blood. You protect the most important machine in the world, the human body.

"Your reward as safety engineers is the well being of all the people who come within the scope of your efforts."

•

We are advised to beware of the man who is usually right—but who is never in doubt.

•

A small lightweight, transistorized battery-operated tape recorder is now available. Standard tape speeds of 1⅞, 3¾ and 7½ ips are available.

The unit has automatic volume control and incorporates a playback speaker. Power is furnished by four standard Size D flashlight cells.

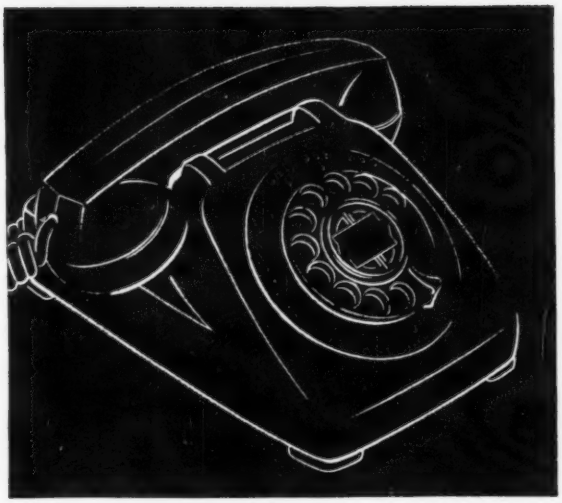
Other features include dual track recording, 3-inch reels, fast rewind, automatic erase, and accessory cord for operation from a 6-volt automobile battery.

Up to 70 minutes of recording are obtained on each reel. The recorder measures 3½ x 4 x 6½ inches.

•

Mr. W. D. Nichols, chief engineer of the Signal Office, Sixth Army, in San Francisco, and long-time friend of the writer, informs us that they do not have any trouble in the northwestern section of the United States with rodents eating plastic cable, provided it is properly buried.

If, however, a section of this type of cable becomes exposed for a short distance, it is invariably damaged by the gnawing of rodents. It seems that when any of these rodents cross the cable, they invariably take a bite at it. It is believed that the greater part of the trouble can be blamed on jack rabbits and badgers.



TYPE 82 DIAL-LIGHTED TELEPHONE

You See the Dial in the Dark!

With Automatic's new Type 82 Dial-Lighted Telephone, your subscriber can actually dial in the dark! Letters, numbers and finger-holes on the dial are lighted. An added convenience for which your subscriber will gladly pay extra.

Now your subscriber can make calls in darkness or twilight without groping for the right finger holes. And, when the phone rings at night, the light leads him right to it. Users tell us that the Type 82 is a handy directional guide in a dark room, too.

The Type 82 Telephone has all the famous Type 80 features—plus a lighted dial! And, it's available in any of our 10 attractive colors. Ask your Automatic representative about the Dial-Lighted Telephone. He'll be glad to give you all the details.

AUTOMATIC ELECTRIC

NORTHLAKE, ILLINOIS

Subsidiary of GENERAL TELEPHONE

BICC execute Major Telecommunication Projects ANYWHERE IN THE WORLD

Consult BICC about the Planning Manufacture and Installation of Telecommunication Projects.

We have had long experience in this kind of work in many parts of the World. A few of our recent contracts are briefly described below.

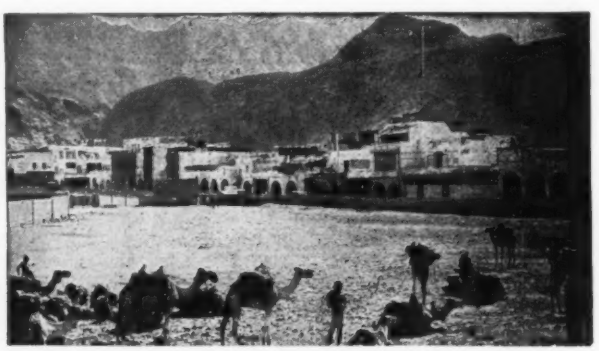
The following types of BICC Cable are in continuous manufacture for telephone administrations in many countries: coaxial and balanced pair cables for carrier working, long-distance audio cables, paper or polythene insulated exchange-area distribution cables.

We shall be pleased to give you further information from our nearest Branch Office or from our Headquarters in London.

AUSTRALIA *Electrification of the New South Wales Railway Western Line has necessitated a completely new track-side cable scheme covering the 34 miles from Sydney to Penrith. The main cable comprises 6 pairs for 24 channel carrier working and 60 audio pairs for local telephone and control purposes. Many of the audio pairs are terminated at railway stations, signal huts, power substations, etc., in order to provide local facilities. The installation was undertaken by BIC Construction Co. for the N.S.W. Railways Department, the cable being manufactured by BICC.*

NEW ZEALAND *BICC have supplied a long-distance cable between Auckland and Hamilton for the New Zealand Post and Telegraph Department. BIC Construction Co. supervised the installation and undertook the progress and transmission testing. The cable consists of 4 coaxial tubes to provide long-distance carrier or television circuits, together with a surrounding layer of 54 audio pairs for intermediate local circuits. The pairs are loaded. The cable is buried direct in the ground for most of its eighty-mile route, except when passing through towns where it is laid in ducts.*

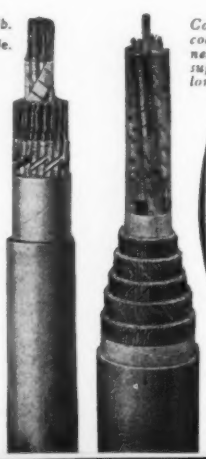
VENEZUELA *BIC Construction Co. have undertaken the jointing and supervision of installation of a 448 pair 20 lb. long-distance audio cable to improve the telephone service between Caracas and Maiquetia. With a route length of approximately seventeen miles, the cable runs wholly in ducts along the side of a newly-constructed auto-road linking the capital town of Caracas with the coast. This contract has been undertaken for the Compania Anonima Nacional Telefonos de Venezuela, the cable being manufactured by BICC.*



ADEN *To extend existing facilities and to cater for the Colony's growth, a new distribution network has been installed comprising approximately 44 miles of BICC cables specially protected against soil corrosion.*
The new network provides an increase of 3,000 lines and consists of paper-insulated local distribution cables ranging from 15 to 200 pairs, the larger sizes being of the unit twin type. A short balanced and loaded audio cable was also installed to link the Town with the new refinery site at Little Aden. This contract was undertaken for the Aden Posts and Telegraph Department.

Left: a BICC jointer at work on a coaxial cable, cutting the tubes ready for jointing. Two typical cables for carrier working are illustrated on right.

BICC manufacture every type of telecommunication cable and undertake their installation — anywhere.



24 channel 24 pair 40 lb. carrier telephone cable.

Composite cable with 4 coaxial tubes for 960-channel or television, with 18 supervisory pairs and 390 long-distance audio pairs.

BICC

***Planning • Manufacture • Installation for* TELECOMMUNICATION SYSTEMS**

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ESCO RINGING EQUIPMENT

MEMBER

ADDITIONAL ESCO FEATURES (details in future ads pictured on the dial) — further explain why Esco components are included in installations of prominent suppliers like Automatic Electric Co., Federal Telephone and Radio Corp., Kellogg Switchboard and Supply Co., Leich Sales Corp., and Stromberg-Carlson Co.

motor-driven tone alternators for tones matching Bell System

Esco tone alternators combine a drive motor and up to three permanent-magnet tone generators in a single frame. The alternators develop standard Bell System 500 and 600 modulated 120 cycle tones. An optional third circuit supplies a 420 modulated 40 cycle tone for ring back. What's more, with Esco motor-driven tone alternators, the same drive motor supplies driving power for the interrupters as well. This integrated design saves space and equipment and it means better balance and alignment, too.

As you would expect, Esco alternators feature permanently-sealed, precision ball bearings, protected construction, finest materials and workmanship, plus rigid tests and inspection throughout manufacture — they're made by specialists in rotary electrical equipment.

These are some of the reasons why Esco alternators give smoother, quieter operation and longer life — some of the reasons why so many equipment engineers and suppliers choose Esco. But get the full facts for yourself. Send for our free booklet on ESCO RINGING EQUIPMENT today.

Write today for full information

ELECTRIC SPECIALTY CO.
176 South Street, Stamford, Connecticut

Courts and Commissions

Uphold Cal. Bell Leasing Private Mobile Facilities

Pacific Telephone & Telegraph Co. won the right to continue leasing and maintaining private mobile radio systems in California, it was reported on July 3. Private mobile radio communications are used by taxicab fleets, truckers and messenger services.

The California State Supreme Court upheld an earlier decision by the California Public Utilities Commission which decided that Pacific T&T's presence in this field constituted no threat to competition.

The AT&T-Western Electric consent decree, issued in January 1956, prohibits AT&T and its subsidiaries from "leasing and maintaining facilities for private communications systems, the charges for which are not subject to public regulation."

The court held that since Pacific T&T offered private mobile service to the general public, the commission's ruling that it became a utility function was correct and could not be disturbed.

OK Raise, Financing Pleas; Ask Increase In Ill.

The Illinois Commerce Commission recently took the following actions:

The Home Telephone Co. of Arenzville was granted the entire amount requested in their rate raise petition (TELEPHONY, May 10). This increase of $5,385 represents a 5.8 per cent return on the company's $30,298 net original cost rate base.

The DeKalb-Ogle Telephone Co., Sycamore, was granted permission to issue 22,024 shares of $10 par common stock. This stock is to be sold to present stockholders on a one-for-eight basis. The money thus raised is to be used to reimburse the company for money spent on construction and acquisitions.

The Farina Mutual Telephone Co. was granted permission to issue $20,000 in notes payable to Stromberg-Carlson Co. The money is to be repaid in 240 consecutive monthly installments. These funds are to be used for construction.

The Tampico Farmers Mutual Telephone Co. was granted permission to issue $12,200 worth of unsecured promissory notes due on June 1, 1963. The money is to be used for reimbursement of moneys spent for acquisition of property or for construction.

•

Also in Illinois, the Inland Telephone Co., Champaign, asked the commission to approve a $13,200 rate increase, it was reported on July 1.

Florida Company Gains Temporary Raise

The Starke Telephone Co. on July 9 was granted a temporary increase under a $10,000 bond by the Florida Railroad & Public Utilities Commission (TELEPHONY, May 3). The new rates will go into effect when the exchange is converted to automatic operation.

The bond was ordered to cover any difference between the rates finally approved and the temporary rates.

The rates, as approved for the company's three exchanges at Starke, Lawtey, and Kingsley Lake, include EAS between the three. Rates are as follows:

One-party business	$8.50
Two-party business	7.50
Five-party business	6.25
One-party residence	5.50
Two-party residence	4.50
Five-party residence	3.25

Cut 16 Per Cent From Ohio Company Rate Raise

The Van Wert Telephone Co. was granted a $39,149 increase by the Ohio Public Utilities Commission, it was reported on July 1 (TELEPHONY, May 17).

This raise represents a 16 per cent cut in the $47,000 in increased annual revenues asked by the company.

The commission also reduced by 10 per cent the rate base claimed by the company, allowing $1,538,240 instead of the $1,661,707 requested by the Independent.

The increase will raise the company's total gross revenues to $414,474, the commission said.

Pacific T&T Denied Raises On Local Wash. Service

The Washington Public Service Commission on July 11 denied a Pacific Telephone & Telegraph Co. request for an increase in its local service rates. (TELEPHONY, April 5.)

However, the commission authorized the company to boost its charges by $2,856,300 on long-distance calls and on the cost of non-recurring service, such as installing or moving telephone equipment. The new charges will go into effect July 21.

By its action, the commission refused to grant some $6,385,500 in rate increases requested by the company.

The order approved an increase of five cents a call on station-to-station intrastate long distance calls up to 60 airline miles. It also increased from 1½ times to 1¾ times the difference between the cost of person-to-person calls and station-to-station calls.

No increase was applied to station-to-station calls over 60 airline miles and the report charge for uncompleted person-to-person calls was eliminated.

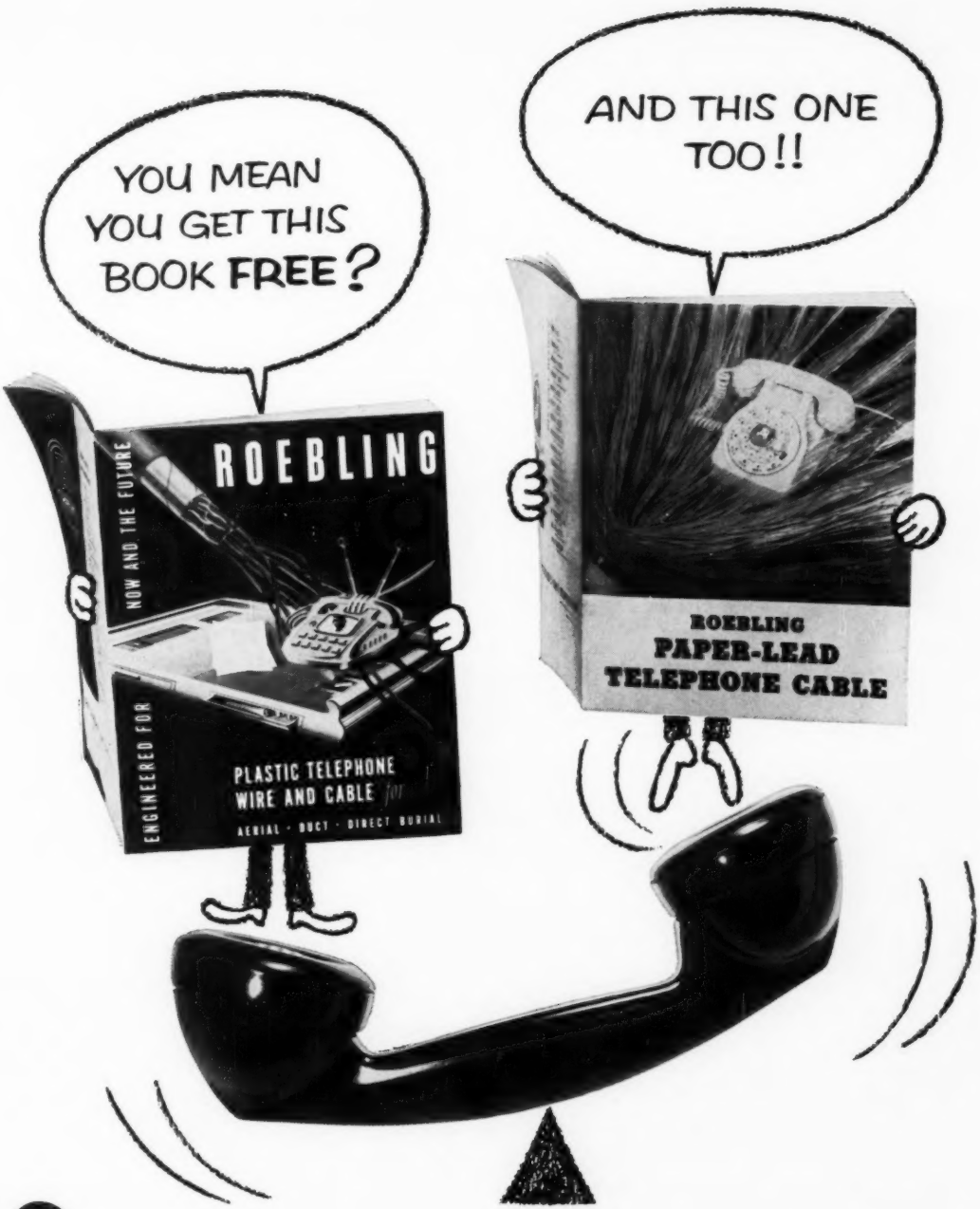
The order increases the charge for business installations from the present seven dollars to $15, residence installation from $5.00 to $10, and the charge for moving telephone sets from $3.00 to $5.00. The charge for installing extension telephones will go from $3.00 to $5.00.

The Commission said the increases are designed to provide the company a 6.1 per cent rate of return on its investment and boost its net operating income to a total of $11,519,247.

Indiana Bell Asks To Buy Company, Proposes EAS

The Indiana Bell Telephone Co. on July 3 filed a petition with the Indiana Public Service Commission asking for authority to purchase the Oaklandon Telephone Co. (TELEPHONY's 1958 Directory lists 558 telephones served by the Oaklandon exchange.)

The petition also proposed extended area service between the Oaklandon ex-



Generations of Roebling telephone cable and wire experience are wrapped up in these two fact books! If you use paper-lead or plastic telephone cable in aerial, duct or direct burial installations, you need all these facts at your finger tips. Beside manufacturing, size and test data, both books contain useful installation and splicing hints, helpful tables, scores of illustrations! Worth a three-cent stamp to add these valuable books to your technical library: Yes, *sir!* Just clip the coupon to your letterhead and mail today. Electrical Wire Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

ROEBLING

Branch Offices in Principal Cities • Subsidiary of The Colorado Fuel and Iron Corporation

Electrical Wire Division
John A. Roebling's Sons Corp., Trenton 2, N. J.
Please send me:
☐ Roebling Plastic Telephone Cable and Wire Fact Book
☐ Roebling Paper-Lead Telephone Cable Fact Book

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Company_____

Address_____

City_____ Zone_____ State_____

NEW,

IMPROVED DESIGN!

Extended mounting slot now fits ALL standard 12" or 8" pin spacings . . . eliminates costly re-boring.

Case® ALUMINUM CROSS-ARM TRANSPOSITION BRACKETS.

Many new carrier circuit designs call for a reduction in wire spacing from 12" to 8". Normally this means thousands of new pin holes must be bored . . . an expensive and time-consuming job. Now . . . the new, improved Case cross-arm transposition bracket with the extended mounting slot fits all standard 12" or 8" pin spacings . . . eliminates the need for costly re-boring, and saves you thousands of dollars per year. If you are planning to re-space and transpose wires from 12" to 8" spacings, be sure to check first with Case.

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CASE BRACKETS . . . STRONG, LONG-LASTING, ECONOMICAL, ESPECIALLY ADAPTED FOR CARRIER-CIRCUIT CONSTRUCTION

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TRANSANDEAN ASSOCIATES, INC.

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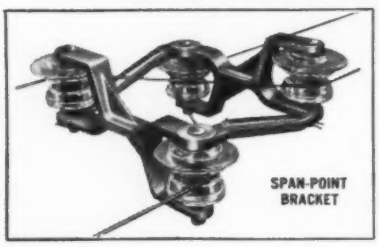
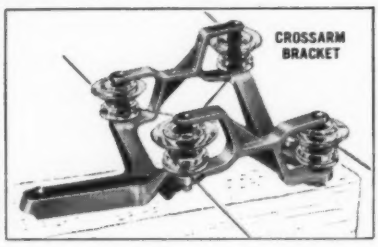




change and the McCordsville exchange of the Hancock Rural Telephone Corp., Greenfield.

Ask Raises, Sale, Merger Approvals in Kansas

A Sept. 9 hearing date was set by the Kansas Corporation Commission on the application of the Western Light & Telephone Co., Great Bend, for a $128,960 rate increase.

This increase would affect a total of 5,058 subscribers receiving service through the company's Claflin, Hardtner, Hoisington, Kiowa, Ness City, and St. John exchanges.

•

In other actions, the commission set a Sept. 2 hearing date on the application of the Barnes Telephone Co. for a $2,300 increase. The company serves 184 subscribers.

A Sept. 8 hearing date was set on the applications of the Twin Valley Telephone Co., Miltonvale, to take over the area now served by the Greenleaf Telephone Co. and to merge with the Miltonvale Telephone Co. The Twin Valley company also asked for approval of a stock issue.

Internal Revenue Service Issues Excise Rulings

The Internal Revenue Service recently ruled that amounts paid by telephone subscribers for listings in the classified directory are not subject to the local telephone excise tax.

However, any amounts paid for alphabetical directory listings are considered a part of the payment for local telephone service and therefore are taxable under the law.

The IRS also has ruled concerning payment of penalties and interest by persons who refuse to pay excises at the time they pay their bills. In these cases, IRS held that the prescribed 6 per cent interest should be collected from the time the customer pays his bill at the company to the time he pays his excises direct to the IRS.

General of S.W. Asks N. M. Installation Charge Raises

The General Telephone Co. of the Southwest, San Angelo, Tex., has asked the New Mexico Corporation Commission for permission to raise rates for new installations by $23,900.

This increase would cover a $23,300 wage raise granted by the company to New Mexico employes on Apr. 27.

The company serves Hobbs, Lovington, Jal, Eunice, Carlsbad and Loring. It asks that the rates become effective on Aug. 10.

Proposed residence installation charges would increase from $3.00 to $5.00 and inside residence moves and additional connections would go from $1.50 to $3.00.

Proposed installation charges for business telephones would be increased from $4.00 to $7.50. The charge for inside business moves and other connections would be raised from $1.50 to $3.00.

N. C. Commission Approves Financing By Two Companies

The Mooresville Telephone Co. has been authorized by the North Carolina Utilities Commission to issue and sell 2,000 shares of $25 par common capital stock at a price of not less than $30 per share, with the company's stockholders being given first chance to buy the stock and with any remaining stock being offered to the public.

The company plans an expansion program calling for the expenditure of $160,000. The stock sale will realize not less than $60,000 and the additional $100,000 needed for the program will be obtained through debt financing.

Morris Telephone Co., Roxboro, has been authorized by the commission to borrow $200,000 from the Life Insurance Co. of Virginia, with the loan being repaid at 5 per cent interest and being made under a supplemental deed of trust or trust indenture.

In seeking the additional capital, the company cited continued expansion of facilities and services.

Pennsylvania Commission Grants Rate Increase

The Pennsylvania Public Utility Commission has authorized a $10,000 rate boost for the Huntington & Centre County Telephone Co., Warriors Mark, it was reported on July 2.

The company will eliminate a 10-cent toll charge between Warriors Mark and the Tyrone exchange of Bell Telephone Co. of Pennsylvania, the commission said. The elimination will save Warriors Mark subscribers an estimated $2,000 annually.

Swedish Group Files Patent Suit Against AT&T

A group of Swedish business men filed suit on June 15 in federal court in New York against the American Telephone & Telegraph Co. and subsidiaries. The suit seeks 54.9 million dollars in treble damages for alleged patent infringements, unfair competition and anti-trust violations.

Plaintiffs are Sten Daniel Vigren, Walter Otto, Wilhelm Broberg, Rolf

TELEPHONE COMPANIES

Use this fast portable trencher for cable, pipe, tubing, conduit

POW-R-SPADE narrow trenches cost 1c to 5c per foot including labor.

•

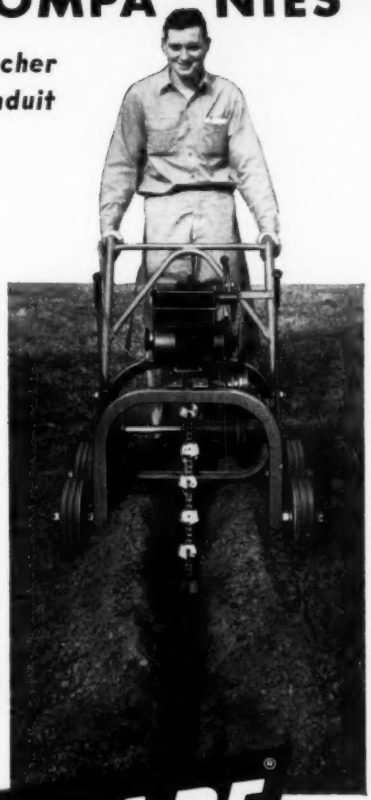
Saves 80% - 90% cost and time compared to subcontract or hand digging.

•

Ready to go on the job, at once — no costly waiting around.

•

Can pay for itself in one day's operation.



POW-R-SPADE digs a neat 3" wide trench. Dirt is delivered well pulverized on each side of trench — no lumps or clods. Easy to back fill.

STAMPINGS

POW-R-SPADE®

MADE BY STAMPINGS, INC. Davenport, Ia.

Portable from job to job. Easily handled by one man.

APPROVED and recommended by hundreds of users in every area of the United States.

Get more facts about the earning power of POW-R-SPADE.

WE ADMIT that these are strong statements. And yet, POW-R-SPADE users confirm them again and again. For here is a machine that is ideal for trenching 3" wide to 24" deep, where larger machines are costly and impractical; where hand labor is slow and expensive. No heavy wheel marks or unnecessarily wide trench to scar lawns. Digs right up to foundation of building. Goes 1½ to 17 feet per minute, depending upon soil conditions.

A rugged machine. Easy to set and to operate. Oil-sealed bearings. Powered by a well-known engine. Minimum maintenance. Shipped completely assembled, ready to go to work for you. Additional interesting details and information immediately yours upon return of the coupon.

Stampings, Inc., 1017 Mound St., Davenport, Iowa

Please send literature on POW-R-SPADE to:

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Company_____

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Telephone duct goes down faster, easier, when it's

BERMICO®

FIBRE CONDUIT

Lays faster than other duct with less labor. Lightweight 8-foot lengths easily cut and tooled on the job speed installation. No alignment problems. No bandaging, compounds or other adhesive materials required.

Complete line of fittings quickly solve the most difficult installation problems. Bends, Elbows, S-Bends, Curved Segments, Angle-couplings, Plugs, Caps, Manhole Bells, Flexible Duct, are available.

Smooth inside bore for quick, easy "pull throughs" without danger of abrasion. Precision-milled tapered joints are sealed tight with a few hammer taps.

Waterproof — strong — acid resistant. This tough cellulose fibre conduit is thoroughly impregnated with coal tar pitch, making it exceptionally waterproof, durable and chemically inert. Concrete usage is cut to a minimum utilizing removable vertical separators.

BROWN COMPANY

General Sales Offices:
150 Causeway Street, Boston 14, Mass.
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Distributed by WESTINGHOUSE Electric Supply Company
Offices in principal cities

Albin Zander, and AB Robinia. The last is identified as "a limited liability company of Sweden," with headquarters in Stockholm.

Named specifically as defendants with AT&T were the Western Electric Co., Bell Telephone Laboratories, and the New York Telephone Co.

The suit is based on a United States patent issued to Mr. Vigren and associates for an "electrical control magnet."

The device is described as "useful in telephone relays, crossbar switches, and other switching devices for telephone and like systems." The Swedish group asserts it received "Letters Patent No. 2,693,554" on Nov. 2, 1954, which is still valid and held by the group.

AB Robinia, it was said, has the right to grant licenses for use of this patent.

The plaintiffs are also seeking to enjoin Western Electric from making the electromagnetic relays and Bell Laboratories and the operating companies from using them.

Illinois Mutual Votes To Sell to Independent

The directors of the Gays Mutual Telephone Co. on July 15 voted to sell the company to the Northern Illinois Telephone Co., Lanark.

The sale was announced by Lawrence W. Gammill, vice president of the Gays Company, who said that the Northern Illinois company will assume control as soon as 51 per cent of the mutual's stock has been cancelled. There are 210 shares of stock outstanding.

OK Raise for Neb. Company

The Home Telephone Co., Inavale, Neb., was authorized recently by the Nebraska Railway Commission to charge $1.50 per month for business and residence service. The company serves 36 customers over grounded lines in the town of Inavale and furnishes no rural service. It owns one-fourth interest in the switchboard serving the town and surrounding territory. The commission said the rates would provide $648 in annual revenue. Expenses for 1957 were $405.78, which did not include maintenance or improvements of plant or equipment.

Ask Dividend OK in Ohio

The Northern Ohio Telephone Co., Bellevue, on July 15 asked the Ohio Public Utilities Commission to approve a proposed stock dividend. Under the plan, shareholders would get one share of new common stock for every four

they hold on July 31, payable on Sept. 1. The company now has 421,740 shares of common stock outstanding.

Bell of Canada Political Football, Editorial Says

A recent editorial in the *Toronto Financial Post* had this to say about the latest petition of the Bell Telephone Co. of Canada for rate relief (TELEPHONY, July 19):

"One of the most shocking exhibitions of cheap politics is that which we are again seeing in Bell Telephone's application for a rate increase.

"It will be remembered that the Board of Transport Commissioners approved a rate increase in January. The government hoisted the whole matter until after the election, then rejected the board's recommendation and refused the increase.

"Now, in desperate position, Bell is applying again, and again the little politicians—so far mainly from the municipalities—are in full cry against.

"One of them has privately admitted he isn't the slightest bit interested in the facts of the case; that fighting Bell and a rate increase was a good political issue and he was going to ride it for all its worth. . . .

"To catch up with demand for its service, Bell has an enormous construction program that it must press on with. (One hundred and eighty-five million dollars had been scheduled for this year.)

"The costs of nearly everything it buys have been rising and since its last previous rate increase, its wage rates have risen more than 30 per cent.

"Directly and indirectly thousands of jobs are dependent on Bell's continued activity in keeping pace with demand for its services and with technological development.

"It is sheer, blind folly for the politicians to aggravate the present recession by turning Bell into a football."

Indiana Bell Seeks to Purchase Two Exchanges

Indiana Bell Telephone Co. has asked the Indiana Public Service Commission for authority to purchase exchanges in Elizaville and Mechanicsburg, it was reported July 8.

Indiana Bell said it would consolidate the two areas, rebuild facilities and put up a new dial equipment building.

Ask Raise in Oregon

The Gervais Cooperative Telephone Association on June 30 filed a petition with the Oregon Public Utility Commissioner for a rate increase.

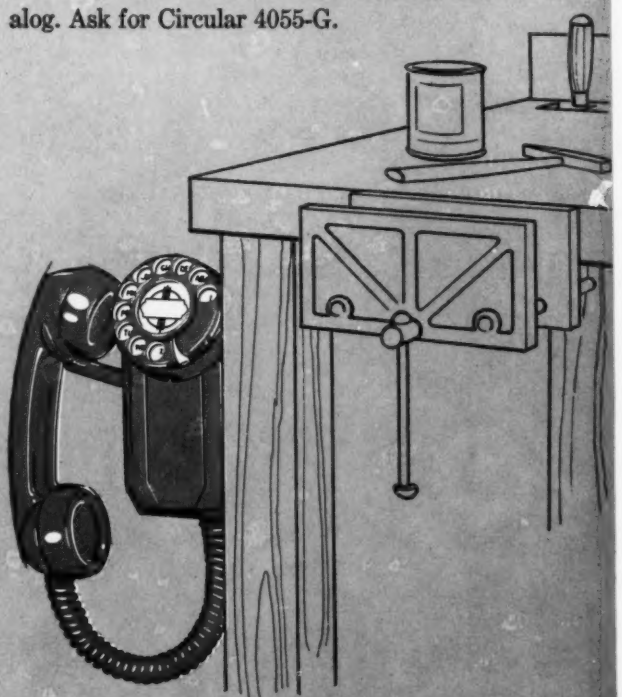
TYPE 83 COMPACT TELEPHONE

Mounts on Any Vertical Surface!

Automatic's Type 83 Compact Telephone mounts on *any* vertical surface—wall, column, side of desk, etc. Saves valuable working space on desk and table tops. Requires only 7" x 3¼" for mounting.

Type 83 Telephones give your subscribers famous Type 80 transmission. And, you don't have to worry about stocking special parts—this phone uses standard components! There's a choice of 10 beautiful colors, too: Gardenia White, Camellia Pink, Forget-Me-Not Blue, Sand Beige, Garnet Red, Jade Green, Classic Ivory, Dawn Grey, Sunlight Yellow and Turquoise.

For complete information on all Automatic Electric telephones, write for our new Telephone Catalog. Ask for Circular 4055-G.



AUTOMATIC ELECTRIC

NORTHLAKE, ILLINOIS

Subsidiary of GENERAL TELEPHONE

General Company of Ohio Wins Defense Reserve Citation

GENERAL Telephone Co. of Ohio—the first Independent telephone company in the United States, and one of the few select industries in Ohio, to receive the Department of Defense Reserve Award — was cited by Secretary of Defense Neil McElroy for its "outstanding co-operation with the Armed Forces Reserve," at ceremonies held at the Harding Hotel, Marion, O., on June 27.

Presenting the award on behalf of the Defense Secretary was Maj. Gen. Ralph W. Zwicker, Commanding General of the 20th United States Army Corps (Reserve), Fort Hayes, Columbus, O.

The award was accepted by Clare E. Williams, president of General Telephone Co. of Ohio, who also spoke on, "Communications — Key To Progress." Everett H. Krueger Jr., chairman of the Ohio Public Utilities Commission, presided over the program. Also speaking on the program was Maj. Gen. Leo M. Kreber, Adjutant General of Ohio.

Attending the ceremonies were some 70 distinguished guests representing the Department of Defense, United States Army, government and industry.

The citation presented by General Zwicker reads:

"The General Telephone Co. of Ohio . . . is cited for outstanding cooperation with the reserve program of the Armed Forces. By its personnel policies of hiring, promoting, and transferring reservists without discrimination and granting military leave in addition to regular vacation periods with compensation for any differential during tours of reserve training, its employes have been encouraged to participate in reserve activities.

"Further, by making available schools, equipment, texts, transportation, instruction, and quarters for training to reserve units, employes have been immeasurably assisted to better fulfill their reserve obligations. The utilization of its house organ, the 'Ohio General News,' to publish pertinent reserve news and information has afforded reserve affairs generous publicity.

"The excellent cooperation of the General Telephone Co. of Ohio with the reserve program is worthy of commendation and reflects the utmost credit upon its management at all echelons."

General of Ohio was chosen for the award on the recommendation of Lt. Col. H. I. Stecher, USA (retired), special studies engineer for the company.

His recommendation was based partly on the fact that the company provides its facilities for use by Company C, 307th Signal Construction Battalion in its reserve training. Commanding officer of Company C is Capt. Charles A. Bowen, division manager of General of Ohio.

Governor C. William O'Neill, unable to attend because of a prior commitment, wrote to commend the company for "a job well done."

"Although I cannot be present," he wrote, "I will be with you in thought, and wish to convey my words of commendation for the honor which you have brought to Ohio. . . . Too frequently, I fear, the benefit and the need for accepting reserve opportunities and challenges during peace-time is overlooked.

"I trust that your example may serve to stimulate other companies and, indeed, citizens all over Ohio to more effective effort in this respect."

Also expressing his regrets at being unable to attend was Sen. Strom Thurmond of South Carolina.

He wrote that the company's "wonderful cooperation" with the reserve program is "a high mark of patriotism. . . ."

"If we had more companies and people in this country as interested as General Telephone Co. of Ohio in the welfare of America, we would have little to fear from any outside power with aggressive desires," wrote Senator Thurmond.

Sen. John W. Bricker, Congressmen Jackson E. Betts and John E. Henderson; Sen. J. E. Simpson, and Representative Kenneth A. Robinson of the Ohio General Assembly, also expressed regrets at being unable to attend and extended their congratulations to the company.

In making the presentation, General Zwicker said that a military unit must be able to shoot, move, and communicate.

He said that as modern weapons were developed, military concepts changed and development of an efficient means of communication became an important problem.

Left Photo: Lt. Col. H. I. Stecher, USAR (Ret.), special studies engineer for General Telephone Co. of Ohio, explains to an advanced group of "C" Company, 307th Signal Construction Battalion, United States Army Reserve Unit of Marion, O., the operations of a microwave antenna using a miniature microwave tower for a model. Standing to the right of Colonel Stecher is Capt. Charles A. Bowen, commanding officer of the "C" Company unit. Mr. Bowen is central division manager for General of Ohio. Right Photo: F. W. Hamper, operating vice president of General of Ohio, discusses block diagrams of carrier equipment at General's Technical Plant Training School in Marion, to an advanced class of "C" Company.

Like other problems that periodically have to be faced by the United States, it was solved, he said. "We have always been able to overcome any obstruction placed in our path," he added.

General Zwicker also commended the reserve training program and said, "Without reserves it is doubtful that we could win and could barely enter any conflict that may arise in the future."

In his talk, Mr. Williams called attention to the development of the telephone communications system in the United States. He said that we in this country have 64 per cent of all telephone service although we account for only 7 per cent of the world's population.

Development of this system has been accomplished by 4,100 companies operating "in our climate of free enterprise," he said.

Maj. Gen. Leo M. Kreber praised the company for its outstanding support of the reserve program. He also stressed the vital importance of civilian soldiers, essential to the maintenance of peace. Every war in which our country has been involved, has been won by strength in civilian soldiers.

Everett H. Krueger Jr., in his talk, commended the company as "a good corporate citizen of Ohio."

General of SW Gets Raises For Four Tex. Exchanges

The following rate increases became effective in Texas exchanges of General Telephone Co. of the Southwest during the month of June:

Palacios: Automatic, 1,073 stations, June 11.

	Old	New
One-party business	$7.75	$10.50
Two-party business	6.00	8.75
One-party residence	4.25	5.50
Two-party residence	3.50	4.50
Four-party residence	3.00	4.00
Mirando City: Conversion to automatic, 125 stations, June 6.		
One-party business	5.50	9.00
Two-party business	4.00	7.50
One-party residence	3.50	5.00
Two-party residence	2.75	4.00
Mobeetie: Conversion to automatic, 62 stations, June 6.		
One-party business	6.50	9.00
Two-party business	5.25	7.50
One-party residence	3.75	5.00
Two-party residence	3.25	4.25
Four-party residence	..	3.75
Winfield: Conversion to automatic, 69 stations, June 24.		
One-party business	6.50	8.50
Two-party business	5.50	7.00
One-party residence	3.75	4.75
Two-party residence	3.25	3.75
Four-party residence	..	3.00

Incorporate Mutual In Neb.

The Cleveland Township Farmers Mutual Telephone Co., West Point, filed articles of incorporation with the Neb-

for your cable maintenance needs

S&G MANUFACTURING CORP.

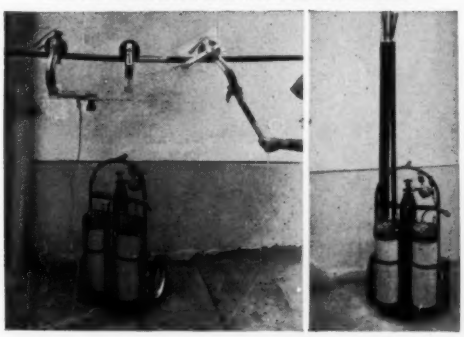
presents . . .

MODEL A
Air Compressor Dehydrator

Exchange equipment designed to supply chemically dry air for telephone cables, aerial and underground, this unit can supply as many as 30 cables. The unit is equipped with volume recording air meter, high and low pressure alarm switches, humidstat and hour meter.

- Completely automatic in operation
- Air Purifier to eliminate oil mist
- Incorporates the latest safety devices

LEAK DETECTOR APPLICATORS



- Castings — aluminum for light weight
- Safety Brackets—steel galvanized
- Nozzle and Piping—brass
- Liquid Line—heavy wall plastic tubing
- Liquid Tank—steel galvanized and brass fittings
- Wheel — nylon bearings, self-lubricating

Applicators use a highly successful chemical type leak detector. Dual nozzles spray all sides of pressurized cable. Bubble cluster forms around leak within minutes and can be clearly seen from the ground. Air pressure bottle in cart supplies regulated pressure in solution tank at all times, can be adjusted for different height cables. For further information on this equipment, as well as the famous S & G Mobile Power Unit and Maintenance Generators . . .

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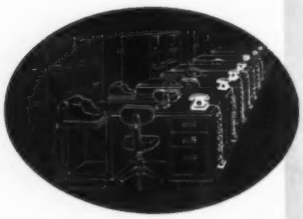
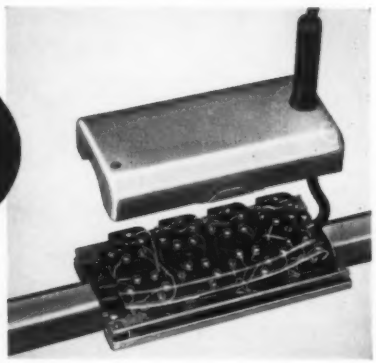
at last! a low cost MULTIPLE TERMINAL BOX

for Planned Telephone Systems



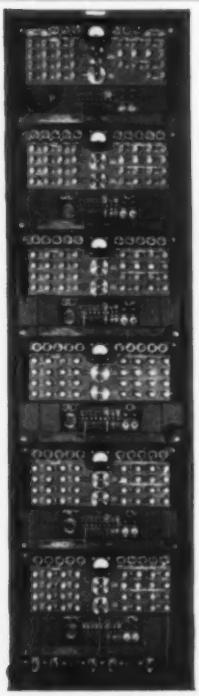


Designed to accept as many as four type 44 terminal blocks, Wiremold's new 2644T Multiple Terminal Box permits Planned Telephone Systems *without attaching fittings to office furniture.* Installation is easy—no new tricks or special equipment are needed. It can be hooked up to any overfloor system—and it's used with underfloor systems as well.

For a trip proof cable system, 2600 Pancake® is the flattest overfloor duct made. It's strong as a bridge, and easy to install with a few simple fittings.

Wiremold developed the first single terminal box for overfloor applications, and again is first with the multiple terminal box. For full information about these Wiremold developments, write:

THE WIREMOLD® COMPANY
HARTFORD 10, CONNECTICUT



MINIATURIZED CARRIER TELEPHONE SYSTEMS FOR RADIO AND 4-WIRE CABLE

FOUR OR 24 CHANNELS

Two miniaturized voice-multiplex systems providing four or 24 voice channels over radio or 4-wire cable are available. They have many advantages over earlier designs: high performance, small size, light weight, low cost, circuit simplicity, low power requirements, small number of tubes of a single type only, low operating cost, low maintenance and high reliability.

These systems provide a voice-channel flat within 1 db from 300 to 3500 cycles, for each 4 kc of bandwidth occupied. Each channel is equipped with hybrid, signalling, and dialling circuits for all the standard 2-wire and 4-wire loop options.

The basic unit provides an order-wire and 4 carrier-derived channels. These units can be stacked in groups of 2, 3, 4 or 5 by means of a group modem to provide 9, 14, 19 or 24 channels. Full flexibility is provided for dropping and inserting channel groups at repeater and terminal points. Moderate lengths of 4-wire cable or open-wire line may be inserted between the multiplex equipment and the radio terminals.

24-channel carrier-telephone terminal complete with hybrids, ringing and dialling circuits, and test facilities. Dimensions are 58" high, 16" wide and 8" deep. Power input 250 watts. Weight 326 lbs.

RADIO ENGINEERING PRODUCTS
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CABLES RADENPRO, MONTREAL

raska Secretary of State on July 11. The incorporators of the non-profit organization — Edward Kratke, et al. — live at Pender.

IN THE NATION'S CAPITAL

Continued from page 18

developments in this test case; and so were all the newspapers, magazines and broadcast stations. Baltimore had already collected $750,000, paid under protest.

Judge Joseph L. Carter, in throwing out the city's tax ordinance, said:

"The press, religion and speech are constitutionally entitled to freedom from the control of the governments of the United States and of the states.

"They are, therefore, immune from any form of regulation or taxation which can be used, directly or indirectly, as a means of political control."

All of which makes this writer wonder whether Uncle Sam's 10 per cent excise tax on telephone monthly bills and long distance calls might be challenged as a restraint on freedom of speech. After all, it is a special form of taxation, singling out a public means of communication—just like the Baltimore ad tax.

•

The Washington State Public Service Commission has decided not to switch from an original cost to a fair value rate base—despite a strong case for the latter, urged by Pacific Telephone & Telegraph Co. The commission turned down entirely the company's request for a boost in local service rates in Washington State. In allowing only about 30 per cent (or $2,856,300) of the annual rate increase sought by the company, the commission confined the increase to intrastate long distance calls, and on the cost of nonrecurring service such as installing or moving telephone equipment.

The commission estimates that Pacific's resulting return from Washington operations will amount to 6.1 per cent as compared with 7.5 to 8 per cent asked by the company. Company officials had also asked that the rate base be the actual replacement cost of its properties minus actual depreciation. The present formula calls for rates to be based on the original cost of properties minus the depreciation taken by the company for tax purposes.

•

We've received word that the United States decision to send military forces into Lebanon has the support of the Communications Workers of America. In a letter addressed to President Eis-

enhower, President Joseph A. Beirne (according to a press release, datelined "Washington, July 16") stated in part:

"On behalf of the Communications Workers of America, AFL-CIO, I hasten to convey to you the support of this union of nearly 300,000 telephone workers for your decision to send American military forces into Lebanon."

•

Representative Patterson (R., Conn.) has introduced a bill (H.R. 13291) which would repeal the retailers and manufacturers excise taxes and the excise taxes on admissions and dues, communications, transportation, and safe deposit boxes. Twenty-eight bills are now pending which would repeal the telephone taxes.

H. E. Cain Appointed Comptroller of O. Company

Harold E. Cain, for 11 years connected with the Warren Telephone Co., has been appointed comptroller, of The Western Reserve Telephone Co., a newly created position. Mr. Cain will be responsible for all of the company's accounting functions. He will be located in the general offices of the company in Hudson, Ohio.

H. E. CAIN

While with the Warren Telephone Co., Mr. Cain held a variety of administrative and executive posts in the accounting and commercial departments. These included general auditor, treasurer and commercial superintendent. Recently he was commercial superintendent of The Inter County Telephone Co. of Fort Meyers, Fla.

Mr. Cain prepared for his accounting career, which covers 18 years, by taking a number of courses in accounting and business administration in Youngstown College, which now is known as Youngstown University.

Canada to Add Two Cities To Microwave—TV Networks

Plans for linking Kamloops and Kelowna to the trans-Canada microwave network by next year, were outlined in a joint statement issued on June 23 by the Canadian Broadcasting Co. (CBC), and the British Columbia Telephone Co., Vancouver, B. C.

Both cities are scheduled to receive the CBC's network television service by September 1959.

Key point in the channeling of live television programs to Kamloops and Kelowna will be the trans-Canada relay terminal on Lost Horse mountain, near Hedley, where additional electronic equipment and antennas will be installed to beam television signals to both centers.

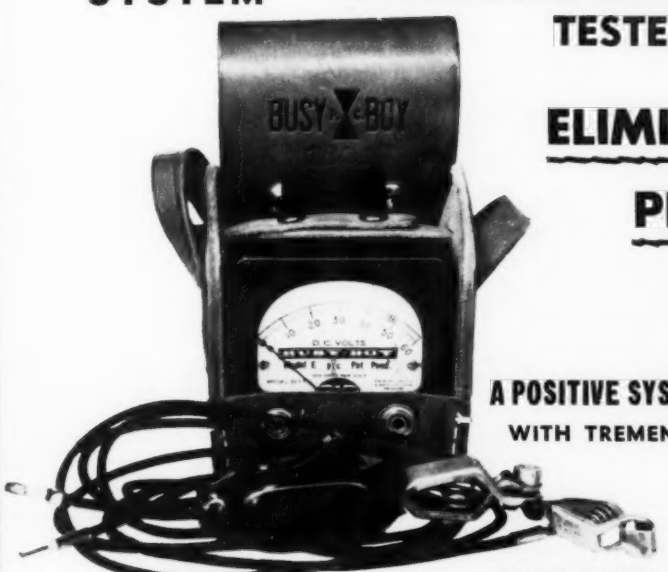
Spanning the rugged terrain between Hedley and Kamloops will be three intermediate relay points situated at Missezula, Promontory, and Greenstone mountains.

British Columbia Telephone Co. has already established radio repeaters relaying long distance telephone con-

"VISUAL SYSTEM"

BUSY-BOY

TESTER MODEL E



ELIMINATES ALL PLANT SERVICE INTERRUPTIONS!

A POSITIVE SYSTEM ACCOMPLISHED ELECTRICALLY WITH TREMENDOUS SAVINGS AND ADVANTAGES

SIZE:
3¼" x 4" x 4"
Universal Model, for all departments working on telephone circuits.

Manufactured—Distributed By:

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NEW KLEIN

stripping tool

for all types of control cable

Patents 2398979
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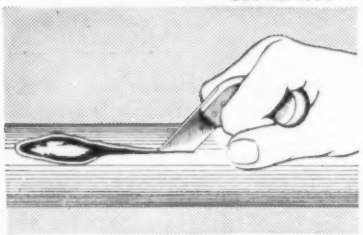

Here is a new tool developed by Klein, designed to strip insulation from all types of control cable, flexible cords, PWC, telephone cable with vinyl or polyethylene jackets and bus drop.

Handle of cast aluminum, light in weight and with convenient grip; knife of tempered tool steel may be sharpened and is easily removed for replacement. This tool strips insulation from a few inches to as many feet as desired swiftly and simply. Does not damage conductors inside weatherproof sheath.

Write for bulletin giving complete information.

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100 years of service to linemen, electricians and industry is back of this new Pocket Tool Guide No. 100. A copy will be sent you on request without obligation.

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versations between Vancouver and Kamloops at these three sites. The additional equipment carrying television transmissions will be installed alongside the existing radio-telephone equipment during the coming year.

Kelowna will be linked to the trans-Canada network at Hedley through a new relay point which is to be established near Summerland in the Okanagan valley.

The trans-Canada telephone system's coast-to-coast microwave system linking Sydney, N. S. and Victoria, B. C. went into operation on July 1.

Obituaries

WILLIAM F. SLOAN, 78, retired partner in the consulting engineering firm of Sloan, Cook & Lowe, died on July 20 in Chicago. He was formerly with the Commonwealth Edison Co., and from 1907 to 1913 was appraisal engineer for the Wisconsin Railroad Commission.

Mr. Sloan was chief of the equipment production section, communications division, of the War Production Board from 1942 to 1945.

In World War I, he served as an Army Captain assigned to aircraft production, and as technical adviser to the Postmaster General during government operation of wire services.

He is survived by his wife, Geneva Groves Sloan; two sisters, and a brother.

•

R. S. GRIFFIN, north central division manager for General Telephone Co. of the Southwest, died on May 31 in Sherman, Tex., following several weeks' illness.

Mr. Griffin entered the telephone business in 1930 as a construction clerk with South Carolina Continental Telephone Co. at Sumter. Later he worked with telephone companies in Georgia, Alabama and Iowa.

He went to Sherman in 1954 as vice president and general manager of the Texas Telephone & Telegraph Co. which later merged with General of the Southwest.

He is survived by his wife; a son, Charles, and a daughter, Juanita.

•

FRANK A. KESSLER, 74, a member of Stromberg-Carlson's engineering development staff on a consulting basis since 1949, died on May 30 in Los Angeles, Cal.

He began his telephone career as a pole man for the Berkeley (Cal.) Telephone Co., and during vacations worked up to top man on the pole. By this means he put himself through the University of California.

As a graduate engineer he found employment with a telephone equipment manufacturer. He was selected as engineering coordinator on a large installation in Australia.

Another assignment took Mr. Kessler to England for six years, where he handled both mechanical and circuit details on various installations.

In 1947 Mr. Kessler became a member of Stromberg-Carlson's engineering development staff. He retired in 1949, but was still retained by Stromberg-Carlson on a consulting basis until the time of his death.

Mr. Kessler was the holder of many patents in equipment design.

Surviving are his wife, Mrs. Elizabeth Kessler of Los Angeles; and two sons, Philip A. Kessler of West Bend, Wis., and James F. Kessler of Rochester, N. Y., apparatus development engineer at Stromberg-Carlson.

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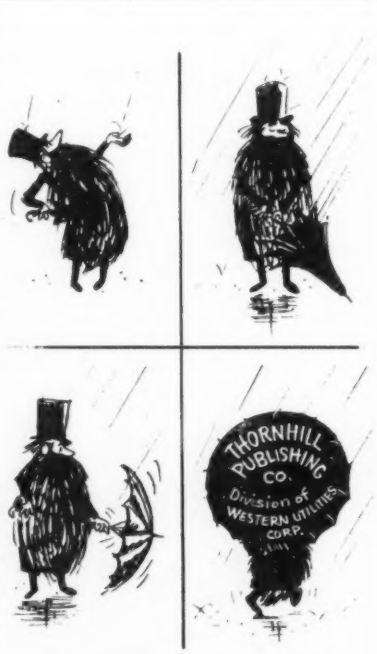
HOWARD W. BARNARD, 67, owner and operator of the Cache (Oklahoma) Telephone & Electric Co. died on March



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COOS BAY, OREGON - BEAVERTON, OREGON

29 in Wichita Falls, Texas, after an illness of several months.

Mr. Barnard owned and operated the company at Cache for 42 years. He was responsible for the installation of the first electric light and telephone service in Cache.

Prior to owning his own company, he worked for Automatic Electric and Stromberg-Carlson.

Mr. Barnard was born in Hager City, Wis. He is survived by his wife, Mrs. Lula Blake at Walters, Oklahoma; a daughter and one brother.

New Headquarters Announced By General Telephone Corp.

General Telephone Corp. has leased 17 floors, the 10th through the 26th floors, comprising approximately 132,500 square feet, in the new 27-story air-conditioned office building being erected in New York City at 730 Third Ave. from 45th to 46th Sts. The lease runs for a period of 25 years.

According to Donald C. Power, president of General Telephone Corp., the new building, to be known as the General Telephone Building, will house all executive and administrative personnel of the parent company in the General Telephone System.

Construction of the building is well advanced and it is estimated that occupancy will be in May 1959.

Soviet Communications Overrated, Facts Show

The weakness of Russia in the communications and other fields was pointed out in an article which appeared in the July issue of the *Readers Digest* and which was condensed from the Apr. 11 and 25 issues of *U. S. News & World Report*. The *Digest* quotes in part:

"The Soviet communications picture is also one of great weakness. The country is reported to have perhaps 2 million telephones, as against 64 million in the United States; 8 million radio receivers, plus 23 million wired speakers that ensure against listening to unauthorized programs, compared with 140 million radios in use in the United States; 2 million TV sets compared with 47 million in this country."

Does U. S. Offer More Rewards For Merit?

Ironic as it seems, it may be that the communists can teach capitalist America something about the "profit motive" after all, according to the Chamber of Commerce of the United States.

With the outpouring of news about

TYPE 80 DESK TELEPHONE

All the Features Your Subscribers Want!

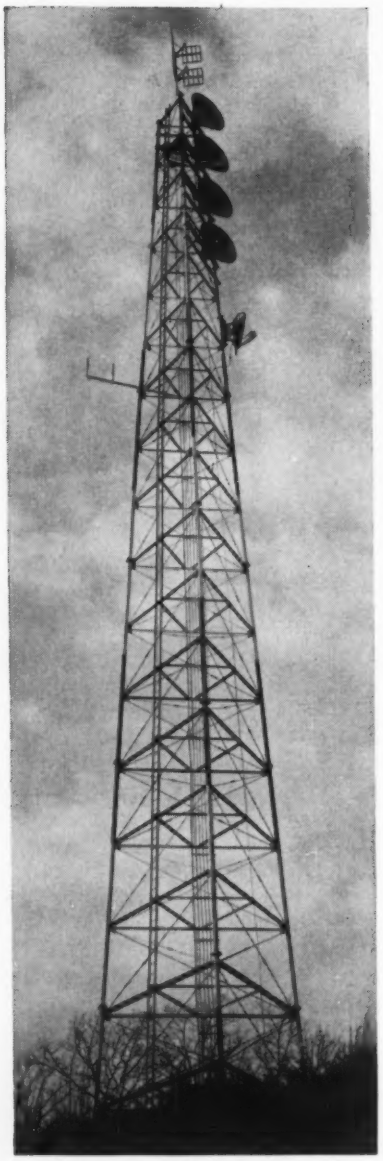
Automatic's famous Type 80 Telephone combines beauty with function. It's the perfect companion for today's modern furnishings. Just right for family rooms or any other room in the home.

Subscribers like the Type 80 Telephone—not only for its beauty, but for its other features, too. They like the life-like transmission and the clarity the Type 80 provides. They like the choice of 10 decorator colors. And, the lighter handset, because it's easier to use.

Use the Type 80 to earn extra revenue for you. To place your order, contact your A.E. salesman or write: *Automatic Electric Sales Corporation, Northlake, Illinois. Telephone: Fillmore 5-7111. In Canada, Automatic Electric Sales (Canada) Ltd., 185 Bartley Drive, Toronto 16.*

AUTOMATIC ELECTRIC

Subsidiary of GENERAL TELEPHONE



Self-Supporting Microwave Tower with Parabolic Reflectors, Pennsylvania Turnpike

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IN SELF-SUPPORTING MICROWAVE TOWERS

Ask for Expert Advice and Attractive Price

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NORTH WALES • PENNSYLVANIA

Russia, many Americans, says the chamber, have been surprised to learn that Soviet teachers, scientists, intellectuals, industrialists — the talented, creative persons—receive rich economic rewards.

Hard-headed as the communists are, they have never been so deceived by Marxist doctrine as to let it dictate their actual economic system. They understand "what makes Sammy run." They move in the direction of offering more reward for greater merit.

Meanwhile, by way of our federal income tax system, with rates ranging up to 91 per cent on incomes of $200,000 and up, we move in the other direction, says the chamber. The main drive of U. S. taxes, with their increasing penalties upon success, is away from individual achievement and toward a social leveling.

Perhaps it is we who have been deceived, the chamber suggests. For it is we who have tried to level economic differences by steep and unjust tax rates which penalize the talented, creative citizen.

It should not take the Russians to teach us the value of giving the highest rewards to the best producers, the chamber concludes.

U. S. Aids in Developing Nepal Telecommunications

Under a joint agreement signed on June 30 by the United States and the Bharati government of Nepal, the United States will provide $1,350,000 to develop telecommunications in Nepal.

The agreement also provides for establishment of a 1,500-line automatic exchange in Katmandu, Nepal's capital, for calls to any part of the world.

Expected to last two years, the project will include construction of 56 wireless stations in Nepal and one each in Calcutta and New Delhi on the same network.

This network will be linked with the international network run by the Bharati government.

Nepal will meet the Nepali currency cost of the project amounting to about $57,000.

General Telephone Service Gets Two Methods Analysts

John C. Neely and Donald E. Preuss were transferred recently to the General Telephone Service Corp. it was announced on July 1 by Donald C. Power, General's president. Mr. Neely will serve as senior methods analyst in the methods section of the controller's department, and Mr. Preuss has been appointed methods analyst in the machine accounting section.

Mr. Neely was formerly employed by General Telephone Co. of Pennsylvania as revenue accountant. He had been in the revenue accounting department of that company since he was first employed by General Telephone in April of 1950.

Mr. Preuss previously had worked as a methods and procedures accountant at General Telephone Co. of Wisconsin. He has been employed by the General Telephone System since December 1952.

Stock Split Voted in Wis.

Directors of La Crosse (Wis.) Telephone Corp. authorized a stock split of each 10 shares into 11 shares, it was reported on July 14. The additional shares will be issued to holders of record Sept. 15, subject to approval of the Wisconsin Public Service Commission.

The U. S. Army's first Chief Signal Officer to be elevated to lieutenant general, J. D. O'Connell (right), received the third star of his new grade, along with a three-star flag, in ceremonies in the Pentagon office of Lt. Gen. Carter B. Magruder (left), Deputy Chief of Staff for Logistics.

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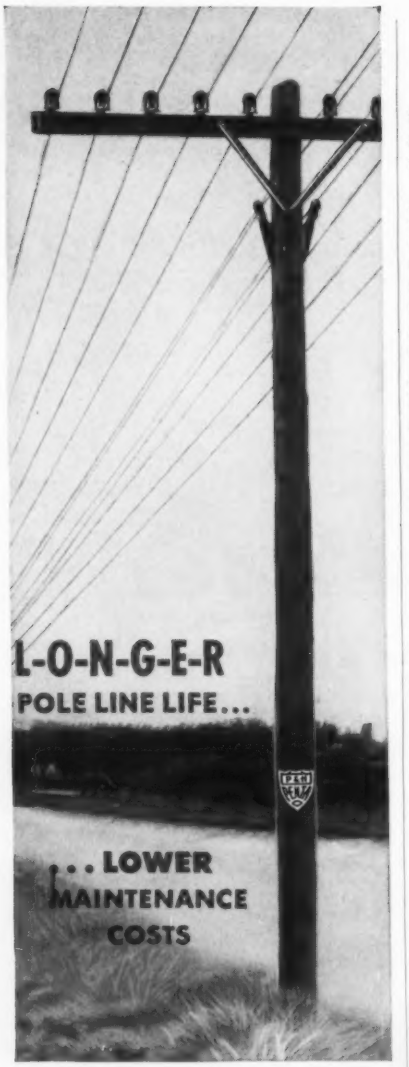

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ADEQUATE SUPPLY OF POLES

Continued from page 30

their strength is comparable to that of southern pine, although the wood is not as easily treated.

Within recent years young stands have restocked most of the large acreage logged in the Pacific Northwest during the past century. Many stands of Douglas-fir young growth are between 40 and 100 years old. Since the average stocking is fairly high on good timber-producing land, the average acre supports a large number of trees and high volumes of wood *(Fig. 7)*. A well-stocked acre of 60-year-old Douglas-fir, for example, may support over 300 trees of 7 inches and larger in diameter including many trees 12 inches and larger.

In managing Douglas-fir stands, intermediate improvement cuts or thinnings are required to yield maximum returns from the land. A sizable part of the material removed during these operations can be used for poles. Many private as well as public holdings of Douglas-fir are managed, as are those of southern pine, for integrated utilization of various products from each acre of forest.

The present supply of Douglas-fir trees suitable for poles has not been subdivided by size classes due to lack of detailed field data. However, much more of this supply is in larger diameter and larger length classes than is the case in southern pine stands. Thus, the proportion of trees suitable for large poles is greater than for southern pines. There are also large numbers of Douglas-fir trees over 19 inches in diameter not included in this inventory. They also could be used if needed.

Lodgepole Pine Hardly Tapped

The current annual cut of three-tenths of a million poles of lodgepole is making little impact upon the large supply of this species, estimated at 155 million trees clearly suitable for poles. This species has never contributed more than about 8 per cent to the total national production of poles.

Lodgepole pine grows in essentially pure stands over large acreages in the Rocky Mountains *(Fig. 4)*. It has good form and is easily treated with preservatives. The range in diameters and lengths in virgin lodgepole stands closely approximates that for many southern pine stands *(Fig. 8)*. Growth rates of lodgepole pine on average sites are much slower than for either southern pines or Douglas-fir, and it does not reach the maximum size attained by those species. Diameters in excess of 16 or 18 inches are not common, even though many lodgepole stands are virgin old growth. On the other hand, this species grows in very dense stands, and the number of trees on the average acre that are suitable for poles in the 8 to 14-inch diameter classes is greater than for many southern pine stands. A

Fig. 8. Old-growth stand of lodgepole pine in Wyoming. Many lodgepole stands contain upwards of 200 trees per acre suitable for poles in diameters up to 18 inches and in lengths up to 50 feet. Lodgepole grows more slowly than either southern pines or Douglas-fir, but stand density is usually high and stands contain high proportions of well-formed trees suitable for utility poles.

well-stocked acre of lodgepole pine near maturity at 140 years of age may support more than 200 trees, 7 inches and larger in diameter, including about 50 trees which are 12 inches and larger.

Other Softwoods

Other western softwoods, such as western hemlock, true firs, western redcedar and western larch are also important pole species. Much of this timber grows in mixtures with Douglas-fir and in mixed stands of pine and other conifers. These other western softwoods comprise about two-thirds of the 207 million trees of other species shown in *Fig. 3*.

The Lake States and Northeastern States also contain a large inventory of trees suitable for softwood poles. About one-third of the other softwoods are in stands of spruce, jack pine and northern white-cedar and other species growing in the Lake States and New England States.

Hardwood Supply

Hardwoods have contributed less than one per cent of the poles produced during recent decades. The limited use of hardwoods is partly due to limited inventories of hardwoods having suitable form for poles. Chestnut was once abundant and contributed significantly to pole production, but this species is no longer available. Hardwood trees suitable for poles also are usually scattered through mixed forests which often contain many unmerchantable trees. Logging costs thus tend to be higher than in many coniferious stands. Nevertheless, hardwood forests contain large volumes of trees that could be used for poles, and this supply could be drawn upon if required by market demands.

Shifts in Timber Sources

Forest industries will be drawing more heavily during the next several decades on sources of supply which have been relatively untapped. Increasing cuts of timber are anticipated in the Pacific Coast and Rocky Mountain States, including greater production of poles from Douglas-fir, lodgepole pine and other western species. Marketing of western poles and other timber products is favored, for example, by the development of major transportation systems. As the virgin stands are removed and replaced by vigorous young growing stock, net timber growth in the West and availability of timber suitable for poles are expected to increase. New areas in the Rocky Mountains may be tapped for poles. At the same time, in the South the immediate outlook for supplies of poles is believed favorable. Thus, no shortages of wood poles is on the horizon of the foreseeable future.

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[1]Forest Service, U. S. Department of Agriculture. January 1958. Timber Resources for America's Future. Forest Resource Report No. 14. 713 pp., illus.

[2]Williston, Hamlin L. "Pole Grower's Guide." Occasional Paper No. 153, Southern Forest Experiment Station, Forest Service, USDA., 1957.

[3]American Standards Association. "American Standard Specifications and Dimensions for Wood Poles." Publication 05-1-1948.

[4]American Forestry Association. 1946. "Report on supply and production of wood poles in the United States of America." American Forestry Association. Forest Resource Appraisal. A project of the AFA sponsored by the Edison Electric Institute and the Association of Edison Illuminating Companies. 36 pp., illus.

[5]Anderson, I. V. 1948. "Trends in the utilization of pole species and their effect on forest management." Society of American Foresters Meeting: 1947. pp. 128-140, illus.

[6]Southern Forest Experiment Station. 1936. "Pole and pile timber in four Southeastern Survey units." U. S. Forest Service. Southern Forest Exp. Sta. Forest Survey Release 21. 12 pp., illus.

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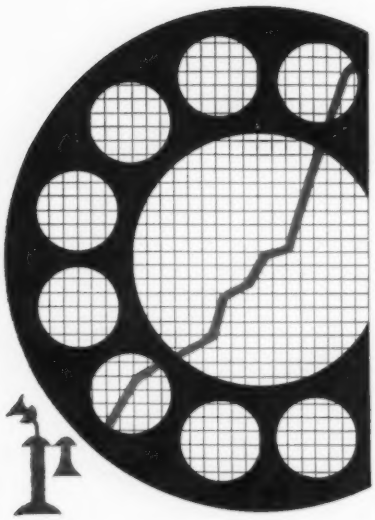

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North Names William Tucker President; Gray, Manager

The board of directors of North Electric Co. has announced the acceptance of the resignation of H. Y. Kraepelien as president and director, effective July 15. Mr. Kraepelien, president of North Electric since 1954, joined the General Telephone Corp. (TELEPHONY, July 19).

WILLIAM TUCKER

On the effective date, William Tucker assumed the duties and position of the president, in addition to his office as chairman of the board and chief executive officer.

E. W. GRAY

Simultaneously, Mr. Tucker announced the appointment of E. W. Gray as telephone division manager. Mr. Gray, associated with North Electric since 1950, is well acquainted with the telephone field and brings to his new post a broad background of industry experience, having held the position of assistant to the president, and more recently, director of research and development.

HOMER ROELLE

Mr. Tucker also announced that Homer Roelle has been appointed manager, line supplies, telephone division.

Graybar to Market CEC Line of Test Instruments

Graybar Electric Co. and Consolidated Electrodynamics Corp. have signed a non-exclusive distributor agreement authorizing Graybar to stock and market CEC's Alectra line of portable test instruments, it was announced on June 26.

Graybar, with headquarters in New York City, has 20 district offices and more than 100 branch offices in cities throughout the nation.

William F. Johnson, CEC director of sales, said that Consolidated's primary markets for these products in addition to the telephone industry have been in the electronic, aircraft, and geophysical fields.

The Alectra line of portable test instruments, designed and manufactured by CEC's Alectra division in Pasadena, Cal., includes modular-designed ac and dc voltmeters, oscillators, attenuators, and noise-measuring sets.

A. B. Chance Buys Wash. Crossarm Plant

The purchase of the Chehalis, Wash. crossarm plant of the Joslyn Mfg. & Supply Co. by the A. B. Chance Co. has been set for completion Aug. 1.

This Washington plant will expand the Chance company's crossarm production facilities which include five American Crossarm & Conduit Co. plants acquired in 1957. This company, which has been operated as a wholly owned subsidiary, was dissolved on June 30 into the A. B. Chance Co. and will oper-

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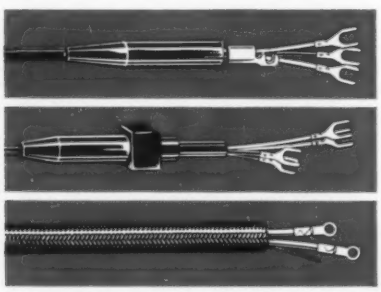

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Aerial view of Chance's new Chehalis, Wash. plant.

ate as the American Crossarm & Conduit Division of the A. B. Chance Co.

Fred Masterson who was president of the American Crossarm & Conduit Co. has been made a vice president of the A. B. Chance Co.

The Chehalis, Wash. plant, like the American Crossarm plants, makes a line of wooden crossarms, cross braces, ground wire moldings, and related items. It has facilities for kiln drying and pressure treating.

Seven Receive Managerial Appointments at Graybar

Graybar Electric Co., Inc., has announced the appointment of seven new managers. They are:

M. J. Sullivan, manager at Youngstown, effective July 1.

C. M. Newbill, district sales manager of San Francisco, and C. C. Ross, district sales manager at Dallas. Both promotions became effective July 1.

E. J. Hoff, manager at Fort Worth, also effective July 1.

L. A. Peterson, district operating manager at Seattle, beginning Aug. 1.

Also on Aug. 1, A. N. Saxon will become branch manager at Jackson, Miss., and E. P. Kempen becomes branch manager at Corpus Christi, Tex.

Onan Appoints R. E. Mullin General Sales Manager

C. W. Onan, president of D. W. Onan & Sons Inc., Minneapolis, on June 30 announced the appointment of Roy E. Mullin as general sales manager.

Hiram Hascall, formerly general sales manager and now vice president

Kellogg Switchboard & Supply Co. personnel gather with Perry Roehm (far right), director of marketing for International Telephone & Telegraph Corp., during the ITT division's recent national sales conference in Chicago. They are (from left): K. C. Tompers, field sales manager; O. C. Bailey, general sales manager; K. H. Benninghoven, district manager; George Taylor, salesman, and Mr. Roehm.

R. E. MULLIN

in charge of sales, is retiring at the end of the current year after more than 16 years of service in these capacities.

Mr. Mullin became general sales manager on July 1, and Mr. Hascall will remain on active duty for the balance of this year and will be available in a consultant capacity for some time thereafter.

HIRAM HASCALL

Roy E. Mullin formerly was vice president in charge of sales and marketing for a large automotive manufacturing company. His experience there included both domestic and export markets for commercial products through a distributor-dealer distribution system (similar to Onan's), sales to original equipment manufacturers, military contract business, and specialized markets.

Mr. Mullin is a native of Minneapolis, a graduate of Roosevelt High School there, and he attended the University of Minnesota. During World War II he served in the U. S. Navy.

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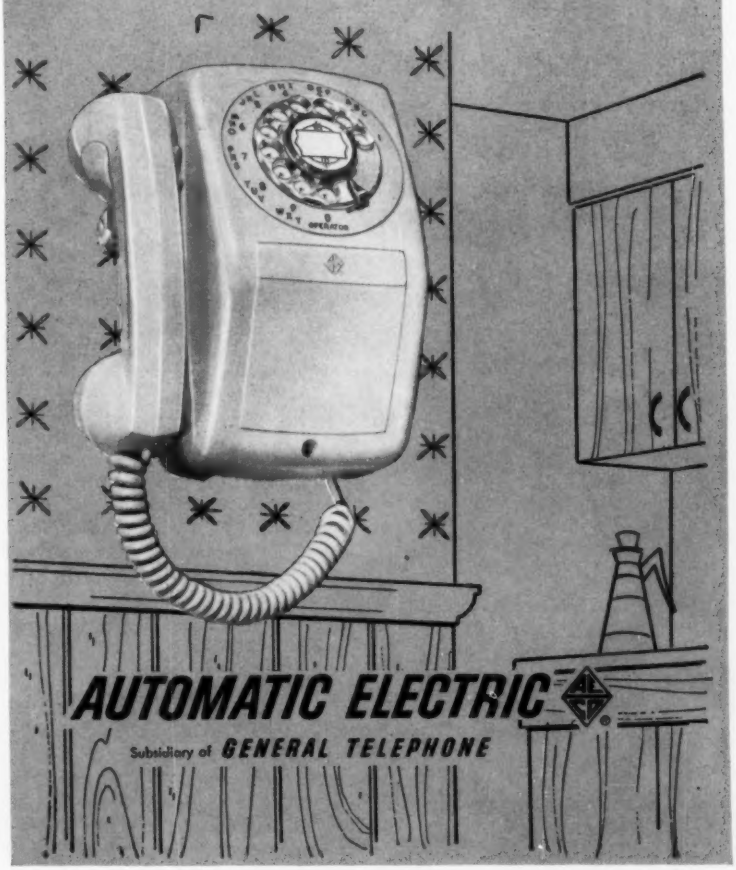

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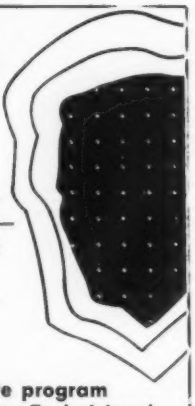

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Pagemaster Sales Engineer Appointed at Stromberg

Ralph E. Martin has been appointed sales engineer for the Pagemaster sales department of the telecommunication division of Stromberg-Carlson, according to an announcement by F. Leo Granger, Pagemaster sales manager. Stromberg-Carlson is a division of General Dynamics Corp.

R. E. MARTIN

In his territorial assignment Mr. Martin will work closely with distributors of Pagemaster, selective radio paging system, in the states of Illinois, Indiana, Ohio, Kentucky, Wisconsin and Michigan.

Prior to joining Stromberg-Carlson Mr. Martin had been Pagemaster sales representative for Boom Electric Corp., exclusive Pagemaster distributor in the Chicago area.

A resident of England most of his life, Mr. Martin previously had been sales manager of the communication division of General Electric Co., Birmingham, Eng. Earlier he was a salesman for the Telephone Manufacturing Co., London, and an apprentice telephone engineer with the British post office.

Born in Colombia, South America, Mr. Martin moved to England with his family when he was six years old. He attended Hove High School, Brighton College in Sussex, and the Wallace Attwood College of Salesmanship, in London, and earned certificates (diplomas) at each.

IT&T Discloses Personnel Recruitment Program

A new personnel recruitment program was disclosed recently by International Telephone & Telegraph Corp. with the appointments of four regional industrial relations representatives.

Fred Wilson, IT&T vice president, industrial relations, said recruiting efforts will be combined on a regional basis, with each representative responsible for recruitment of all engineering and scientific personnel, as well as administrative and executive personnel from middle management up to vice president.

Previously, recruitment of personnel was at a divisional level within the corporation.

The four new regional representatives for ITT are:

David C. Foreman, southern region, formerly with IT&T's Kellogg Switchboard & Supply Co.

Donald J. Reid, midwestern region, formerly with IT&T's subsidiary, Federal Electric Corp., at Paramus, N. J.

George W. Peck IV, eastern region, formerly supervisor of technical placement at IT&T's Federal Telecommunication Laboratories in Nutley, N. J.

George W. Beck Jr., western region, formerly assistant to the president of IT&T's Federal Telephone & Radio Co. of Clifton, N. J.

Each of the four regional representatives will be responsible for activities in 12-state areas, Mr. Wilson said.

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204CG Case equipped with 12 SM11 units (88MH side, 50 MH ph) $100.00
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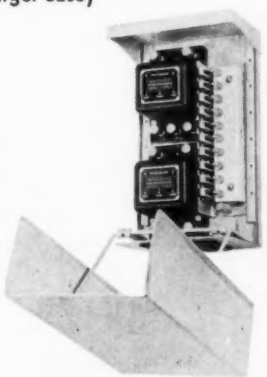
complete with 2 #C-161 repeating coils (Signal Corps moisture-proof version of W.E. 77A) and W.E. #84A, 5 pair protector with #26 & #30 discharge blocks. Heavy galv. metal with cover (wires enter at bottom).

Also available with W.E. #76A or #75A rep. coils (same price) $15.00
(mountings sold only with coils)



Coil Mounting

Repeating Coils (new)

W.E. 77A (substitute) C-161	$ 3.50
76A (two coils) 1:1 rat.	5.00
75A (better matched)	6.00
91A (double coil)	10.00
93A, B, F, G	12.50
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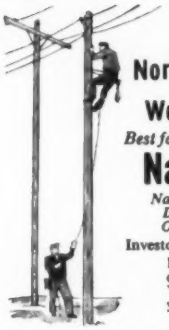

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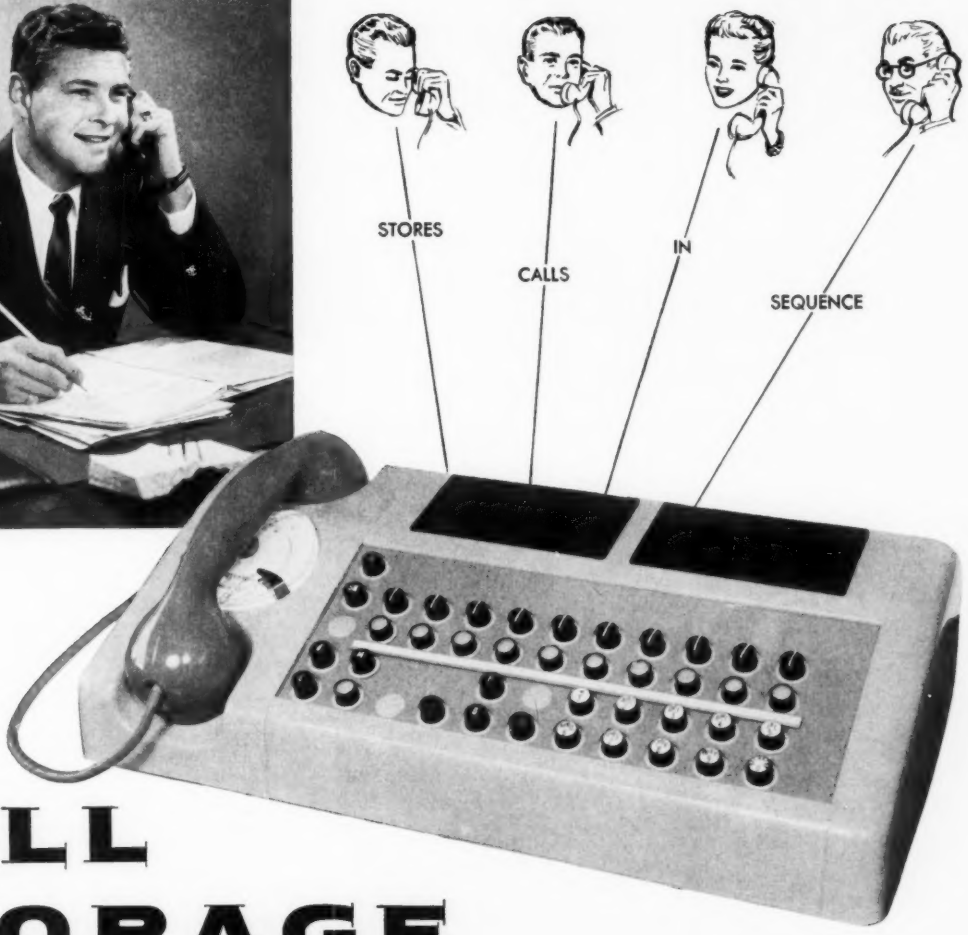

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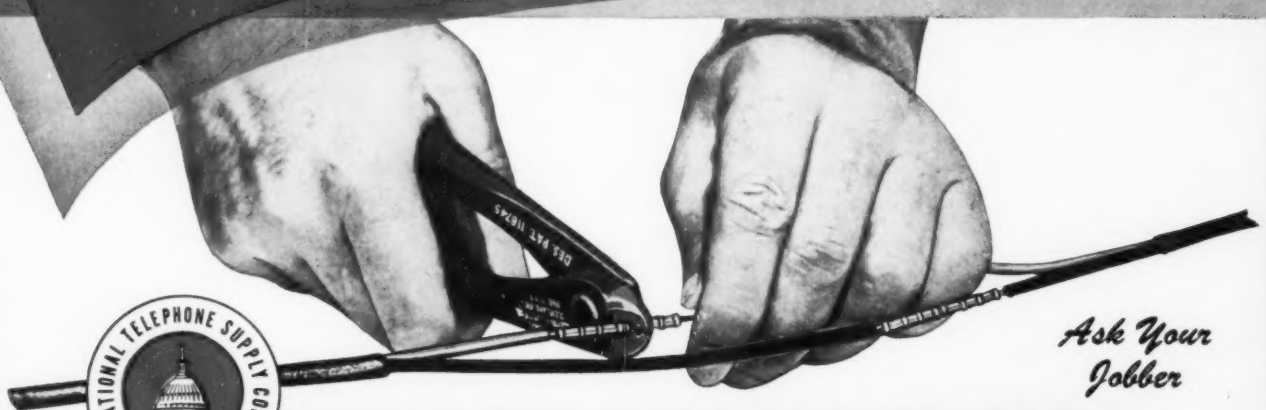

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